Elytra, Tokyo, 17 (2): 101–108, November 15, 1989

A New Subgenus and Species of *Apotomopterus* (Coleoptera, Carabidae) from Taiwan[1]

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Abstract A new subgenus belonging to the genus *Apotomopterus* HOPE is erected under the name of *Taiwanocarabus*, with the description of the new type species, *Apotomopterus* (*Taiwanocarabus*) *masuzoi*, from central Taiwan.

During the zoological expedition 1989 to the high mountains of Taiwan made by the National Science Museum, Tokyo, a series of specimens of a strange carabid beetle belonging to the subtribe Carabina were collected. At first sight, it reminds us of certain species of *Leptocarabus*, especially of *Adelocarabus* or of *Pentacarabus* occurring on the high mountains of central Honshu, Japan, because of its small forebody and slender elytra. Its multi-costate elytral sculpture somewhat resembles that of *Ceroglossus* of South America. However, the absence of ostium lobe and the presence of a sclerotized ligula of the male genitalia prove that it belongs to the group Spinulati, according to the taxonomical works by ISHIKAWA (1973, '78). In our view, the Spinulati now contains the two genera, *Apotomopterus* HOPE and *Siamocarabus* IMURA, and we regard the species in question as a member of the former, mainly on the basis of the direction of the ligular apex. On the other hand, it is considerably different from hitherto known *Apotomopterus* in many respects, and we are going to erect a new subgenus for placing this remarkable carabid beetle and to describe it as a new species in the following lines. Only one species belonging to the genus *Apotomopterus*, namely, *sauteri* (ROESCHKE, 1912) (p. 4), has hitherto been recorded from Taiwan, and the present new species is the second representative of the genus occurring in this tropical island.

The abbreviations used herein are as follows: HW – greatest width of head including eyes; PAW – approximate width of pronotal apex, measured between the most advanced points on both sides; PBW – approximate width of pronotal base, measured between the most protrudent points of hind angles; PL – length of pronotum,

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[1] This study is supported by the Grant-in-aid No. 01041099 for Field Research of the Monbusho International Scientific Research Program, Japan.

measured along the mid-line; EW – greatest width of elytra; EL – greatest length of elytra; M – arithmetic mean. The measurement was made by using 30 ♂♂ 30 ♀♀ specimens randomly picked up from the type series.

Before going into further details, we wish to express our deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, under whose leadership the 1989 expedition to Taiwan was carried out, not only for giving us the privilege of studying invaluable specimens but for critically reading the manuscript of this paper. Hearty thanks are also due to Dr. Mamoru OWADA for his kind help in collecting the material used. The first author is greatly indebted to Miss Pamela GILBERT of the Entomology Library, British Museum (Natural History), London, for her kindness in providing with photocopies of the necessary literature.

Subgenus ***Taiwanocarabus*** IMURA et M. SATÔ, nov.

Type species: *Apotomopterus* (*Taiwanocarabus*) *masuzoi* subgen. et sp. nov.

Small-sized *Apotomopterus* carabid beetle somewhat similar in general appearance to certain *Leptocarabus*. Body elongate, with relatively small prothorax and slender elytra; colour black, with more or less lighter appendages; antennae and legs long and slender.

Head subquadrate, slightly convex above with protruding eyes; frontal furrows deep in front, becoming shallower posteriad; lateral grooves distinct; frons feebly convex, irregularly punctato-striate; dorsal surface of head behind eyes finely rugoso-striate; supraorbital margins complete; mandibles normal, with each retinaculum bidentate, the right one being smaller than the left; apical segments of palpi not so strongly dilated; penultimate segment of labial palpus bisetose; antennae filiform, long and slender, without hairless ventral depressions, segment 5 the longest and subequal to segment 6 or 7, each about 1.3 times as long as scape.

Pronotum small, subcordate, a little wider than long, widest before the middle; front angles slightly protrudent anteriad; lateral margins reflexed throughout and clearly bordered; marginal setae absent; hind angles protrudent posteriad, with the apices obliquely bent ventrad; central part of the disc convex; surface punctate, partly becoming uneven and scabrous; basal foveae distinct; median line narrow and finely impressed.

Elytra elongate and weakly convex, widest behind the middle; preapical emargination faintly recognised only in females; primary intervals weakly costate except for apical parts; secondaries weaker than primaries and more or less catenulate; tertiaries indicated by irregular rows of granules; intervals except for elevated parts scattered with micrograngules.

Pro- and mesepisterna distinctly punctate; metepisterna and sides of sternites also punctate, partly becoming scabrous; sternal sulci completely and prominently carved; metacoxa bisetose; legs long and slender, basal four segments of male foretarsus dilated.

Table 1. Comparison between the subgenera *Apotomopterus* HOPE and *Taiwanocarabus* IMURA et M. SATÔ, nov.

	Apotomopterus (s. str.)	*Taiwanocarabus* nov.
Body proportion	usually less specialised, prothorax sometimes even disproportionately enlarged	long and slender, with relatively small prothorax
Penultimate segment of labial palpus	bi- or multisetose	bisetose
Marginal setae of pronotum	present at least by a pair	completely lost
Preapical emarginations of elytra	usually distinct in both sexes and more conspicuous in ♀	faintly recognised only in ♀
Primary intervals	often segmented or indicated by rows of tubercles	weakly costate and linearly continuous except for apical parts
Ligula	long and spine-like	short and thorn-shaped

Male genital organ medium-sized and elongate; aedeagus subcylindrical, not tuberculate nor carinate, with the apex triangularly pointed; ostium lobe invisible at the membraneous preostium; endophallus with a ligula situated at the left side near the base; the ligula moderately sclerotized, thorn- or beak-shaped and sharply pointed at the apex; praeputial pads and peripheral rims of gonopore developed, but neither basal lobe nor paraligula is recognised; female genitalia with vaginal apophysis poorly developed.

Notes. The present new subgenus may be distinguished from the nominotypical one (type species: *Carabus prodigus* ERICHSON) by the diagnostic characters shown in Table 1.

Apotomopterus **(*Taiwanocarabus*)** ***masuzoi*** IMURA et M. SATÔ, sp. nov.

(Figs. 1–5)

Length: 18.6–22.4 mm (from apical margin of labrum to apices of elytra). Width: 6.3–7.5 mm.

Body elongate, with relatively small prothorax and slender elytra with effaced shoulders; antennae and legs very long and slender. Colour black, with shiny head and subpolished pronotum; elytra rather mat, with faint velvety lustre except for the elevated parts and margins which are grossy; basal 4 segments of antennae and of meso- and metatarsi blackish, each with brownish basal part; apical 7 segments of antennae reddish brown; palpi, foretarsi, claws and sometimes elytral margins a little reddish; venter polished and blackish brown, hind body sometimes a little more reddish.

Head subquadrate, slightly convex above with protruding eyes; frontal furrows rather deeply carved in front, especially before the level of fronto-clypeal suture, then obliquely extending to the anterior supraorbital margins, becoming a little shallower posteriad, with the surface sparsely punctate; lateral grooves narrow but distinct; frons feebly convex above, irregularly punctato-striate, usually with a pair of round depressions on each side at about the mid-eye level, each depression not so deep, about half the diameter of an eye; dorsal surface of head behind eyes irregularly and finely rugoso-striate; microsculpture visible, forming fine transverse meshes; supraorbital margins narrow but usually complete; mandibles rather stout, acutely hooked and sharply pointed at the apices; retinaculum of mandible bidentate, the right one being a little smaller than the left; apical segments of palpi not so strongly dilated in both sexes; penultimate segment of labial palpus bisetose; antennae filiform, long and slender, extending slightly beyond basal three-fifths of elytra in male and reaching the middle of elytra in female, pubescent from segment 5, without hairless ventral depressions; relative lengths of scape and segments 2–4, 8, 9 as follows:— 1: 0.85: 1.28: 0.90: 1.18: 1.05; segment 5 the longest, subequal in length to segment 6 or 7, 1.33 times as long as scape; penultimate and terminal segments subequal in length to segment 4 and scape, respectively, though the former two are much narrower than the latter two; median tooth of mentum triangularly pointed with the margin slightly but distinctly reflexed.

Pronotum relatively small, subcordate, only a little wider than long, widest at about apical two-fifths, rather gradually narrowed towards base than towards apex; PW/HW 1.20–1.32 (M 1.27), PW/PL 1.05–1.19 (M 1.13), PW/PAW 1.42–1.57 (M 1.50), PW/PBW 1.33–1.52 (M 1.43), PBW/PAW 1.00–1.14 (M 1.06); apical margin feebly emarginate; front angles either almost rectangular or a little obtuse, slightly protrudent anteriad with rounded tips; sides gently rounded in front, rather weakly sinuate behind, then almost parallel or slightly dilated before hind angles; lateral margins feebly reflexed throughout and clearly bordered, the borders becoming a little narrower towards front angles; marginal setae absent in all the type specimens examined; hind angles rather sharply protrudent posteriad, with the apices obliquely bent ventrad; basal margin evenly bisinuate; disc slightly convex above, with subtriangular apical impression widely divergent anteriad; lateral parts broadly depressed, most widely at about posterior third, with the surfaces punctate in anterior portions, becoming foveolate and scabrous behind the middle; basal impression subquadrate, subtriangularly or sometimes rather roundly protrudent anteriad at the middle, with the surface distinctly foveolate and scabrous; basal foveae large and deep, subtriangular, extending anteriorly along the side borders; these discal depressions give the centre of pronotum a papilionaceous relief, with the surface sparsely punctate and partly becoming uneven; median longitudinal line very narrow and finely impressed, partly becoming unclear.

Elytra elongate and weakly convex above, widest at about apical four-ninths, and much more gradually narrowed towards bases than towards apices; EW/PW 1.43–1.70 (M 1.60), EL/EW 1.89–2.06 (M 1.96); preapical emargination faintly recognised only in females; primary intervals indicated by narrow and weakly elevated costae, linearly continuous except for the apical parts, where they are gradually reduced to

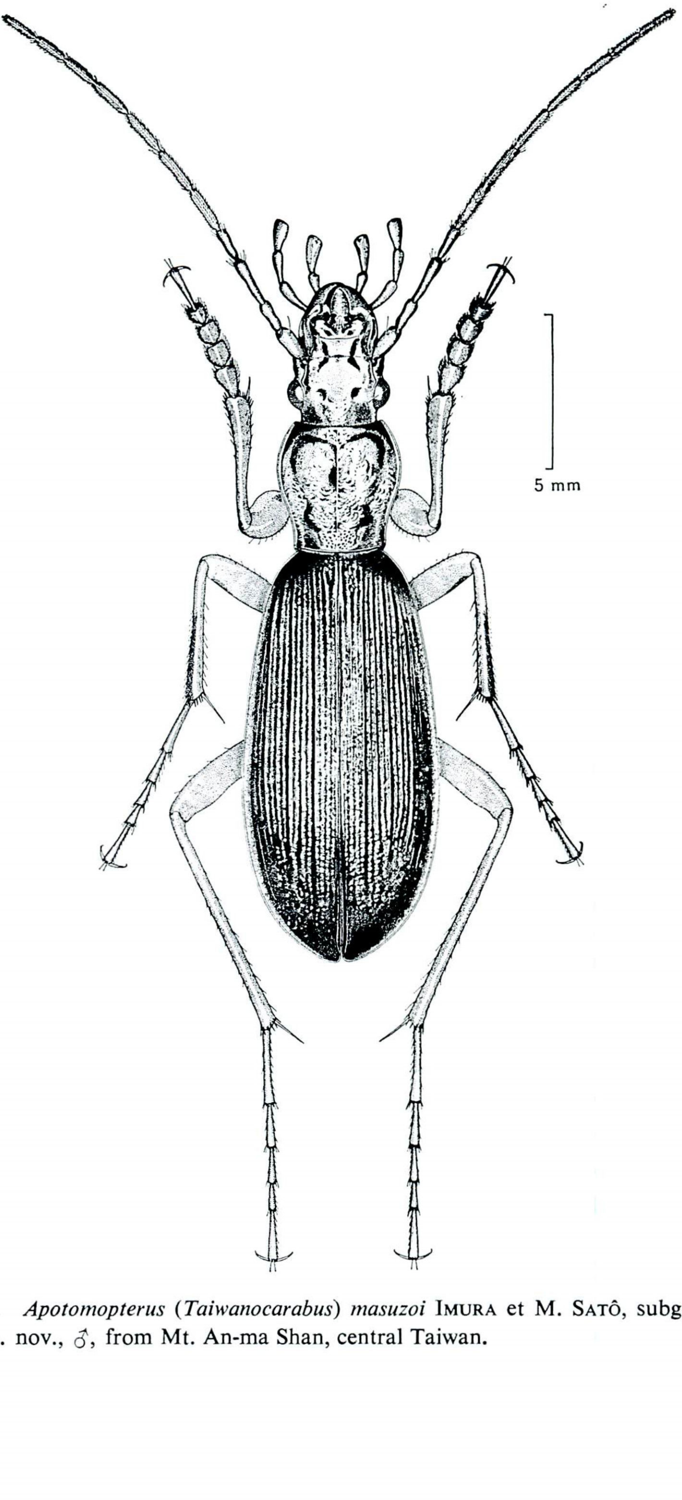
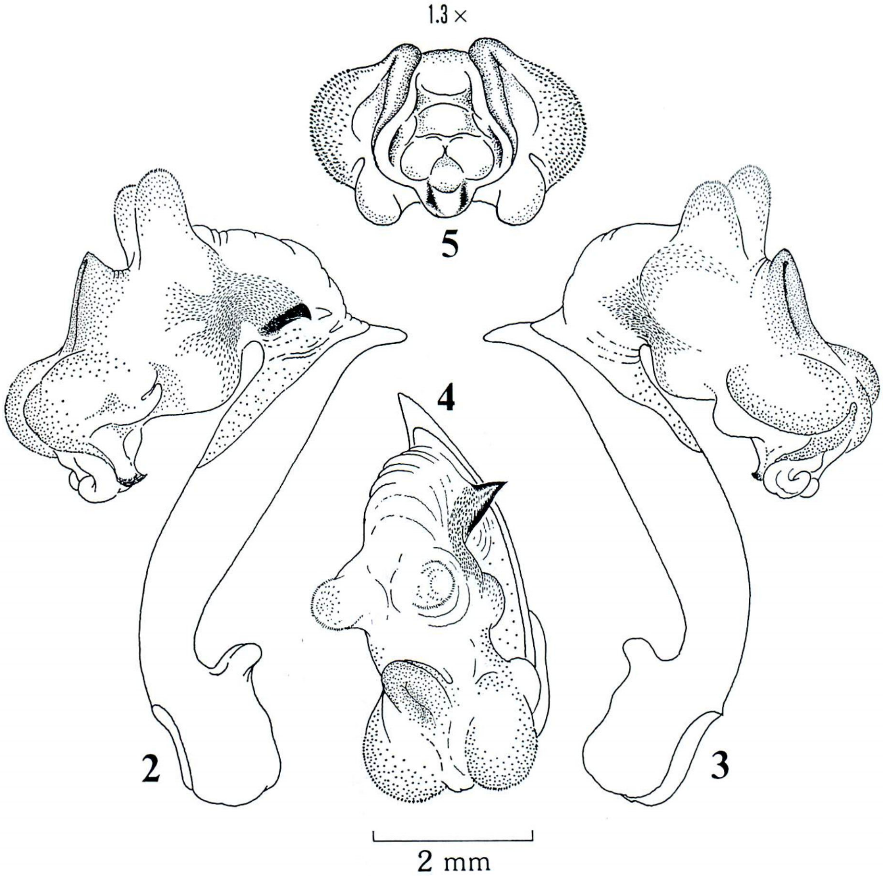


Fig. 1. *Apotomopterus* (*Taiwanocarabus*) *masuzoi* IMURA et M. SATÔ, subgen. et sp. nov., ♂, from Mt. An-ma Shan, central Taiwan.



Figs. 2–5. Male genitalia of *Apotomopterus* (*Taiwanocarabus*) *masuzoi* IMURA et M. SATÔ, subgen. et sp. nov., from central Taiwan; 2, aedeagus with endophallus in fully everted condition (left lateral view); 3, same (right lateral view); 4, same (dorsal view); 5, apical part of endophallus.

form irregular rows of granules; secondaries weaker than primaries and more or less catenulate, being reduced to form rows of granules apically as well as primaries; tertiaries a little lower than secondaries, indicated by rather irregularly set rows of granules; striae between intervals composed of rows of foveoles; intervals except for the elevated parts sparsely scattered with microgranules; umbilicate series indicated by irregular rows of granules extending nearly to elytral apices.

Pro- and mesepisterna rather sparsely but distinctly punctate, microsculpture visible, forming isodiametric meshes; metepisterna and sides of sternites more densely punctate, partly becoming asperous or rather scabrous; sternal sulci completely and prominently carved, but sometimes becoming unclear on segment 7, especially in the central part; metacoxa bisetose, anterior setae absent; legs long and slender, basal four segments of male foretarsus dilated, with hair pads on the ventral surface.

Male genital organ medium-sized and elongate. Aedeagus a little shorter than half the elytral length, with the basal part rather abruptly curved ventrad, median portion subcylindrical, almost parallel-sided and widest at about the middle, apical lobe moderately elongate, gently curved ventrad, slightly compressed laterad and subtriangularly pointed; ostium lobe invisible at the membraneous preostium; endophallus with a ligula situated at the left side near the base; the ligula moderately sclerotized, very short and thorn- or beak-shaped, with the apex gently hooked ventrad and sharply pointed; praeputial pads and peripheral rims of gonopore well developed, but neither basal lobe nor paraligula is recognised; female genitalia less specialised; bursa copulatrix moderately extending dorso-anteriad, with the surface very weakly or barely rugulose; vaginal apophysis poorly developed, with vertical plate very low, both the outer and inner plates vestigial, scanty pigmentation remaining along the longitudinal median line.

Type series. Holotype: ♂, allotype: ♀, paratypes 45 ♂♂, 84 ♀♀, 14～17–VI–1989, S.-I. UÉNO, M. SATÔ & M. OWADA leg. The holo- and allotypes and a part of the paratypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The rest of the paratypes are separately deposited in the collections of the Biological Laboratory, Nagoya Women's University, of the Department of Plant Pathology and Entomology, National Taiwan University, and of Y. IMURA.

Type locality. Mt. An-ma Shan, 2,230 m alt., Ta-hsüeh-shan Mts., T'ai-chung Hsien, central Taiwan.

Other specimen examined. 1 ♀ (24.5 mm), unknown data, in the KANO collection preserved in the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Notes. This remarkable new species was discovered in an evergreen mixed forest on the southern slope of Mt. An-ma Shan, which lies near the southwestern end of the Hsüeh-shan Mountain Range. All the known specimens were found in baited traps, and their natural habitats were not located in spite of enthusiastic investigations made by the members of the expedition. However, the beetles must have concealed themselves in immediate proximities to the trapping sites, since traps set at the same sites as the night before did not attract any additional specimens, which seemed to indicate that the new species was not a very active wanderer, at least at that time of the year.

In Tadao KANO's collection now preserved in the National Science Museum (Nat. Hist.), Tokyo, there is a female *Apotomopterus* without collecting data, which is apparently referable to *A. masuzoi* though somewhat larger than the type specimens. It must have come from somewhere on the Ta-hsüeh Mountains, since the late Dr. KANO was well known as the only scholar who had investigated the fauna of the Hsüeh-shan Mountain Range before the war-time.

This remarkable new species is dedicated to the late Dr. Masuzo UÉNO, a leading biologist in Japan and the father of Dr. Shun-Ichi UÉNO, who unexpectedly passed away on June 17th, 1989, at the age of 89, while his son was leading the expedition party on the high mountains of Taiwan.

要　　約

井村有希・佐藤正孝: 台湾中央部で発見されたトゲオサムシ属の1新亜属新種. —— 1989年度, 国立科学博物館によって行われた台湾高山帯の昆虫類調査において, 同島中央部の大雪山系にある鞍馬山 (Mt. An-ma Shan) から1種の興味深いオサムシが採集された. 本種は, ♂交尾器の特徴によりトゲオサムシ属 *Apotomopterus* HOPE に属するものと判断されるが, 一見, 日本のコクロナガオサムシに似た細長い体形をもつばかりでなく, 既知のトゲオサムシ類各種とは形態的にかなり異なっているので, 新亜属 *Taiwanocarabus* を設け, その基準種を *A.* (*T.*) *masuzoi* IMURA et M. SATÔ として記載した. 本新亜属は, 1) 体はより細長く, 2) 下唇肢次端節の剛毛はつねに2本で, 3) 前胸背板側縁に剛毛を欠き, 4) 上翅端のえぐれは♀にのみわずかに認められ, 5) 上翅第1次間室は翅端部を除き連続する弱い隆条となり, 6) 舌状片は短く, 嘴状あるいは棘状である, などの諸形質により, トゲオサムシ亜属 *Apotomopterus* (s. str.) から区別される. 本新種は, ザウテルトゲオサムシ *A.* (s. str.) *sauteri* ROESCHKE について, 台湾から記録される2種目のトゲオサムシ類となる.

この顕著なトゲオサムシは, 鞍馬山南西面に保存されている常緑混交林に生息している. 既知の全標本はトラップによって採集され, 注意深い探索にもかかわらず, 自然状態での生品は得られなかったが, 一度トラップをかけた場所からは翌日以降に追加標本が採集されなかったことから判断すると, 行動範囲のあまり大きい虫ではないように思われる.

国立科学博物館の鹿野コレクション中に, やや大型ではあるがあきらかに本種と同定できる標本1♀が保存されている. データがつけられていないために詳しい産地はわからないが, 本種が台湾においてすでに採集されていたことは確かだろう.

新種名は, 上記の台湾調査期間中に日本で急逝された, 上野俊一博士のご尊父, 故上野益三博士に献名されたものである.

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Elytra, Tokyo, 17 (2): 109–111, November 15, 1989

Two New Subspecies of Carabina (Coleoptera, Carabidae) from Mt. Togyu-san, South Korea

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Abstract Two new subspecies of Carabina belonging to the genera *Tomocarabus* and *Damaster* are described under the names of *T. fraterculus togyusanus* and *D.* (*Acoptolabrus*) *mirabilissimus kana*, from Mt. Togyu-san, South Korea.

The Togyu Mountains lie between the Sobaek Mountain Range and the Chirisan Mountains in South Korea, and its highest point is marked by Mt. Togyu-san at the northern end, which attains to a height of 1,614 m. The carabid fauna of this mountains is only fragmentarily known as yet, though some, rather widely distributed species have been recorded by KWON and LEE (1984).

Recently, I was able to examine a series of specimens of carabid beetles obtained from Mt. Togyu-san including the high altitudinal area, and recognised the following species belonging to the subtribe Carabina: *Eucarabus sternbergi* ROESCHKE, *Leptocarabus* (*Weolseocarabus*) *koreanus* REITTER, *L.* (*Adelocarabus*) *semiopacus* REITTER, *L.* (*A.*) *seishinensis* LAPOUGE, *Tomocarabus fraterculus* REITTER, *Damaster* (*Acoptolabrus*) *mirabilissimus* ISHIKAWA et DEUVE, *D.* (*Coptolabrus*) *jankowskii* OBERTHÜR and *D.* (*C.*) *smaragdinus* FISCHER.

Of these eight species examined, *T. fraterculus* and *D. mirabilissimus* are morphologically distinguishable from the other subspecies hitherto known. I am going to describe them as new subspecies in this paper.

Before going further, I wish to express my cordial thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kind advice in the preparation of the manuscript of this paper. Thanks are also due to Mr. Tetsuo MIZUNUMA, Toyonaka, for giving me useful information, to Mr. Mitsuro ARAI, Tokyo, for permitting me to examine valuable specimens in his collection, and to Professor Won-Pyo HONG of the Chungnam National University, Taejon, for his kind consideration. Special thanks are due to Messrs. Seung-Mo LEE of the Division of Entomology, National Science Museum, Seoul, and Hiroshi SAWADA, Aomori, for their kindness in providing with the necessary literature, and to Messrs. Ho-Kyoon KIM and Yong-T'ae CHO, Pusan, for their kind help in various ways.

Tomocarabus fraterculus togyusanus subsp. nov.

Closely allied to both ssp. *assimilis* KWON et LEE distributed on the Taebaek and the Sobaek Mountain Ranges and ssp. *jirisanensis* ISHIKAWA et KIM distributed on the

Chiri-san Mountains, but distinguishable from them by the following points: upper surface of pronotum constantly with dark bluish lustre, though not so distinctly as in *jirisanensis*; frons more coarsely punctato-rugulose than in *assimilis*; pronotum with 4 to 8, usually 6 lateral setae, though usually with 5 in *assimilis* and usually with 4 in *jirisanensis*; pronotum a little more strongly convex above than in *assimilis*; sides of pronotum, especially in the posterior parts, not so remarkably reflexed as in *jirisanensis*; central part of pronotal disc not clearly foveolate as in *assimilis*, but constantly asperous or rather scabrous; hind angles of pronotum a little less protrudent posteriad than in the above two subspecies; primary foveae not so deeply concave as in *jirisanensis*.

Length (from apical margin of labrum to apices of elytra): 16.0–18.8 mm. Width: 6.9–8.1 mm.

Type series. Holotype: ♂, Mt. Togyu-san, 1,300–1,600 m alt. on NNE slope, Chollabuk-to, Korea, 9–VI–1989. Paratypes (including allotype): 81 ♂♂, 94 ♀♀, the same data as for the holotype; 25 ♂♂, 45 ♀♀, Muju-guch'ondong Valley, 700–900 m alt. on NNE slope of Mt. Togyu-san, 9–VI–1989.

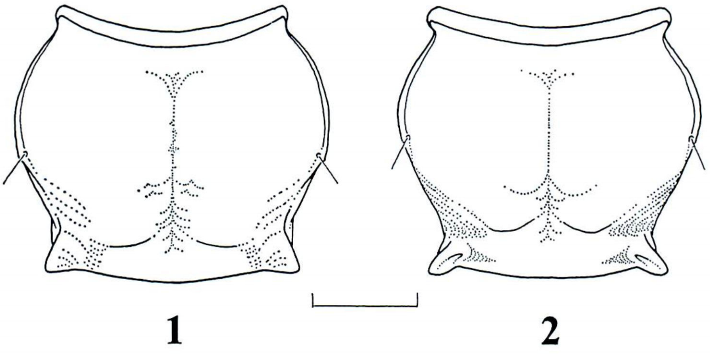
The holo- and allotypes and a part of the paratypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The rest of the paratypes are deposited in the collection of mine.

***Damaster* (*Acoptolabrus*) *mirabilissimus kana* subsp. nov.**

(Fig. 2)

Damaster (*Acoptolabrus*) *mirabilissimus*: KEZUKA & IMURA, 1989, Gekkan-Mushi, Tokyo, (218), p. 3, figs. 36–37.

Allied to the nominotypical subspecies distributed on the Taebaek Mountain Range, but differs from it in the following respects: size a little smaller on an average; elytral colour variable according to individuals, metallic green to coppery red with



Figs. 1–2. Pronotum of *Damaster* (*Acoptolabrus*) *mirabilissimus* (♀); 1, ssp. *mirabilissimus* from Mt. Taebaek-san, Korea; 2, ssp. *kana* nov. from Mt. Togyu-san, Korea. Scale: 2 mm.

faint greenish lustre, but usually more yellow-reddish especially in the basal part, and never with bluish lustre; median tooth of mentum stouter and shorter; sides of pronotum more strongly constricted just before hind angles; hind angles of pronotum narrower and more sharply pointed, each usually with a slight notch at the posterior margin.

Length (from apical margin of labrum to apices of elytra): 21.0–25.5 mm. Width: 7.2–9.9 mm.

Type series. Holotype: ♂, Mt. Togyu-san, Chollabuk-to, Korea, 9–VI–1989. Paratypes (including allotype): 8 ♂♂, 6 ♀♀, the same data as for the holotype.

The holotype is deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are separately deposited in the collections of Mr. T. MIZUNUMA and of mine.

Notes. The type locality, Mt. Togyu-san, may become the southern limit of the distributional range of the species. This new subspecies is named after my daughter, Kana, which means a song of rape blossom in Japanese.

要　　約

井村有希：韓国南部，徳裕山産オサムシの2新亜種．—— 韓国南部，全羅北道にある徳裕山よりオサムシ8種を記録し，*Tomocarabus fraterculus togyusanus* IMURA と *Damaster* (*Acoptolabrus*) *mirabilissimus kana* IMURA の2新亜種を記載した．

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Elytra, Tokyo, **17** (2): 112, November 15, 1989

富士川右岸におけるアオオサムシの記録

井村有希

Yûki IMURA: Record of *Carabus* (*Ohomopterus*) *insulicola* CHAUDOIR from the Right Bank of the River Fuji-kawa, Central Honshu, Japan

アオオサムシ *Carabus* (*Ohomopterus*) *insulicola* CHAUDOIR の本州太平洋岸における分布西限は，富士山南麓から愛鷹山にかけての地域とされているが，筆者は富士川下流右岸（西岸）において本種を採集しているので報告しておく．

12♂♂, 3♀♀, 静岡県庵原郡富士川町金丸山東北東麓，東名高速道路富士川サービスエリア西方（標高 80–100 m），21–V–1989, 筆者採集．

当地は富士川の一支流に沿った北向きの緩斜面で，後方をヒノキの植林にとり囲まれたミカン畑となっており，50 個のベイトトラップを1週間設置して上記の結果が得られたものである．同時にシズオカオサムシ *C.* (*O.*) *esakii* CSIKI も 33♂♂, 43♀♀ 得られたが，アオオサは主としてミカン畑側の開けた環境に，シズオカオサはヒノキ林内の薄暗い場所に多く見られ，狭い範囲ながら微妙にすみ分けているように感じられた．アオオサは体長 27.8–31.3 mm と比較的大型，強壮で，色彩は緑色光沢を帯びた金赤褐色型が主体であり，1♂ のみ緑色光沢の強いものが混じていた．愛鷹山周辺のアオオサが，小型で，色彩もシズオカオサに近くなり，両種の混生地ではときとして交雑個体が得られているのに対し，当地のものには外部形態，♂交尾器ともに雑種と思われるような個体は1例も混入していなかった．

アオオサの西限記録としては，小宮（1975）による清水市内からの報告（2♂♂, 3♀♀, 18–III–1967, 鈴木英文採集）がある．個体の特徴については触れられていないが，かなりとび離れた地点であることから，人為分布の可能性が示唆されている．今回得られたものも，その形態からはむしろ甲府盆地周辺などに分布する個体群に近いように思われ，人里に近い場所という点をも考慮に入れると，人為的に移入されたものが定着しているのかもしれない．本種は普通種であるにもかかわらず，分布辺縁における調査は意外に不十分なようである．今後，富士川下流域におけるより詳しい調査がなされれば，あるいは関西地方における *Ohomopterus* 各種の例に見るように，基盤山地にシズオカオサが，そしてその下方段丘面上に点てんとアオオサが分布している，といったパターンもありえないことではないように思う．

末筆ながら，参考文献の入手にご助力いただいた荒井充朗，冨永修の両氏に厚くお礼申しあげる．

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Elytra, Tokyo, **17** (2): 113–118, November 15, 1989

Occurrence of *Paropisthius* (Coleoptera, Carabidae) in Taiwan[1]

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Abstract A new species of the genus *Paropisthius* belonging to the tribe Opisthiini is described from Taiwan under the name of *P. masuzoi* sp. nov. It is a high altitude species and highly hygrophilus, and is probably related to *P. davidis* (FAIRMAIRE) from Yunnan.

The genus *Paropisthius* CASEY, 1920, is a small group of strange carabid beetles belonging to the tribe Opisthiini of the subfamily Nebriinae, mainly characterized by the large head with two pair of supraorbital setae besides large prominent eyes, the transverse subhexagonal prothorax without marginal setae, and the peculiarly sculptured elytra. It has been known from three Asian species previously described, i.e., *P. indicus* (CHAUDOIR, 1863) from the Himalayas, *P. davidis* (FAIRMAIRE, 1887) from Yunnan and *P. unctulus* ANDREWES, 1932, from northern Kumaon. Of these, the first-named species occurs rather abundantly in the Himalayas, while the latter two have been only poorly known.

On the other hand, a fourth species of this genus occurs on the high mountains of Taiwan. Its existence has been known for some time (cf. NAKANE, 1974), but no proper description has been made until now because of lack of sufficient material.

In the summer of 1989, the National Science Museum (Nat. Hist.), Tokyo, made a biological survey on the high mountains of Taiwan under the leadership of Dr. Shun-Ichi UÉNO. The members of this expedition at last succeeded in obtaining a series of examples of the *Paropisthius* at two stations. Through the courtesy of Dr. UÉNO, I was able to examine this collection, and reached the conclusion that the species in question was new to science beyond all reasonable doubt. In this paper, I am going to describe it under the name of *P. masuzoi* sp. nov. The abbreviations used herein are the same as those explained in other papers of mine.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO for giving me the privilege of examining the valuable specimens and for reading the manuscript of this paper. Thanks are also due to Dr. Kintaro BABA, Professor Masataka SATÔ, Dr. Mamoru OWADA, Dr. Fumihiko ICHINOHE and Mr. Chiun-Chen KER, who kindly helped this study in various ways.

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[1] This study is supported by the Grant-in-aid No. 01041099 for Field Research of the Monbusho International Scientific Research Program, Japan.

Paropisthius masuzoi sp. nov.

(Figs. 1–3)

Description. Length 10.4–11.6 mm. Width 4.1–4.6 mm. Black, dorsal surface shagreened, and with faint greenish tinge; ventral surface shiny, with faint metallic lustre in anterior half; supraorbital areas, lateral sides of pronotum, and shoulders to lateral sides of elytra bright cupreous red; basal segments of antennae, apical parts of tibiae, and tarsi tinged with metallic green; median parts of tibiae brownish.

Head rather flat, shagreened, punctate, and longitudinally rugose in supraorbital areas; eyes large and prominent; temporae very short and oblique; mandibles sharply pointed at apices, with a seta in each scrobe; apex of labrum produced and raised at the middle; clypeus feebly emarginate at apex; clypeal suture very fine, though distinct; terminal segments of both maxillary and labial palpi moderately dilated, truncate at apices, the former a half as long again as the penultimate, the latter a little shorter than the penultimate, which is plurisetose on the inner margin; ligula short, constricted behind, strongly carinate along median line, rather pointed and bisetose at the centre of apex, narrow membraneous paraglossae adnate at base, and extending a little beyond the apex of ligula; mentum with a strongly bifid tooth; antennae moderately long, extending to the basal fourth of elytra, pubescent from segment 5, though segments 3–4 bear a few hairs, scape and segments 2–4 flattened on the dorsal surface, often lightly foveolate; relative lengths of scape and segments 2–6 as follows:— 1 : 0.8 : 1.3 : 1.2 : 1.1 : 1.1.

Pronotum transverse, subhexagonal, gently convex, widest at apical third, a little wider than head (PW/HW 1.04–1.15, mean 1.11), more than a half as wide again as long (PW/PL 1.69–1.85, mean 1.77), a half as wide again as base (PW/PBW 1.47–1.61, mean 1.54); lateral margins entirely bordered, strongly produced laterad at the widest part, where they are reflexed, then strongly convergent anteriad, and slightly sinuate behind apices, rather abruptly and strongly convergent posteriad with concave lines, and almost parallel or a little divergent posteriad at the basal part; apical margin somewhat produced at middle, gently emarginate on each side, apical angles acutely produced, though blunt at the tips; basal margin almost straight, though slightly sinuate on each side, as wide as or a little narrower than the apical, basal angles almost rectangular; disc strongly and densely punctate and rugose; median line short though deep, reaching neither apex nor base; basal transverse impression and oblique basal foveae deep, punctate.

Wings fully developed. Elytra subovate, widest a little behind the middle, gently convex though rather flat on the disc, a half as wide again as pronotum (EW/PW 1.45–1.56, mean 1.50), ca. 4 times as long as pronotum (EL/PL 3.94–4.24, mean 4.08), more than a half as long again as wide (EL/EW 1.51–1.59, mean 1.55); sides narrowly bordered from bases to apices; basal border absent; each apex rounded; scutellum rounded at apex; each elytron with three rows of polished convexities, three or four in number, which are widely interrupted by shagreened depressions, each

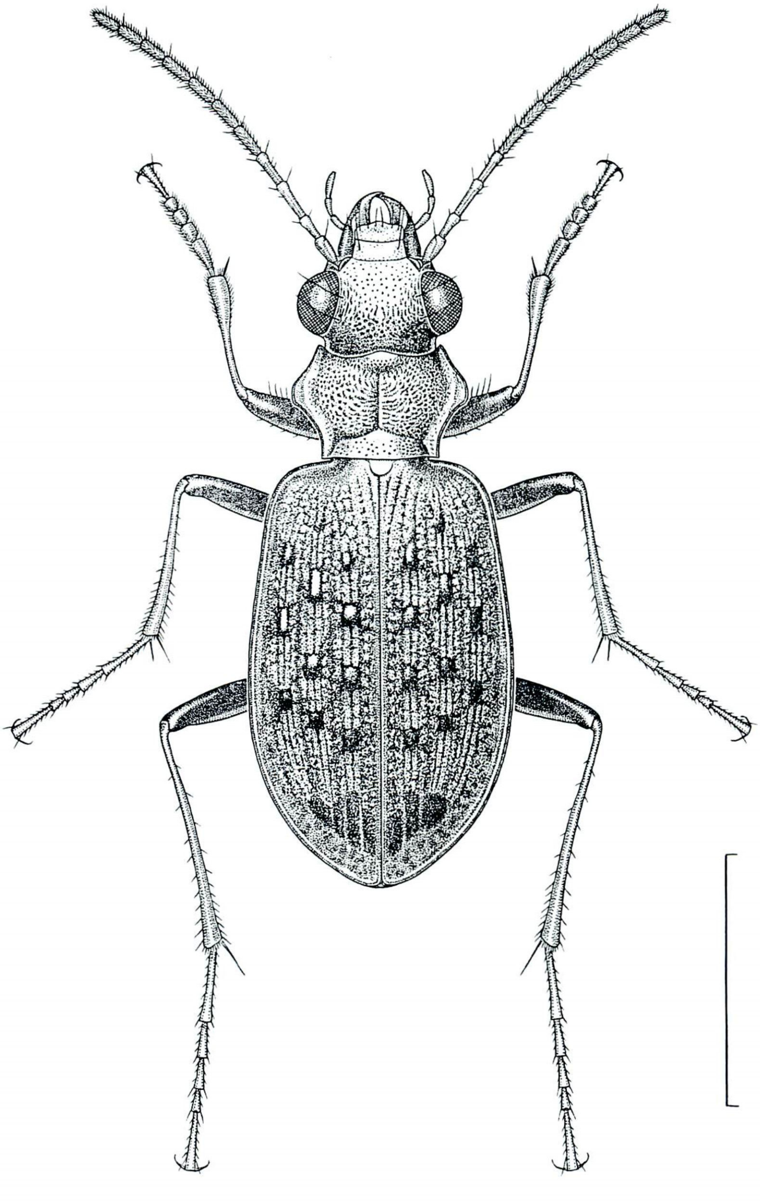
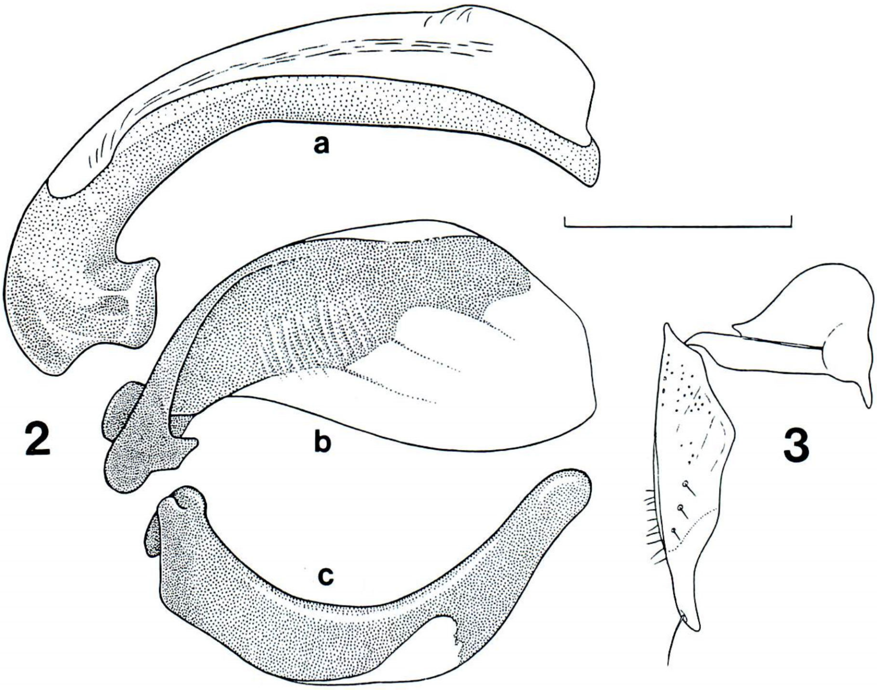


Fig. 1. *Paropisthius masuzoi* sp. nov., ♂, from Mt. Hsiao-hsüeh Shan, Ta-hsüeh Mts., T'ai-chung Hsien, Taiwan. (Scale: 4 mm.)

depression bearing three longitudinal costae and a pore at the centre; rows of convexities amalgamated into a large polished area at the preapical part.

Legs slender; protibiae concave on the inner side of each apex; dorsal surface of tarsi sparsely covered with fairly long hairs; protarsal segments 1–4 dilated and



Figs. 2–3. —— 2. Male genitalia of *Paropisthius masuzoi* sp. nov., from Mt. Hsiao-hsüeh Shan, Ta-hsüeh Mts., T'ai-chung Hsien, Taiwan: a, left profile of aedeagus; b, left paramere, external aspect; c, right paramere, same aspect. —— 3. Female stylus and hemisternite of *Paropisthius masuzoi* sp. nov., from Mt. Hsiao-hsüeh Shan, Ta-hsüeh Mts., T'ai-chung Hsien, Taiwan. (Scale: 1 mm.)

with thick adhesive hairs beneath in the male. Venter shiny; lateral side of pro-, meso-, and metasterna, metepisterna and basal sternite punctate; prosternal process spatulate and projecting, fitting into a groove at the apex of mesosternum; sternites 5–6 punctate and pubescent on median parts; sternites 4–8 with a row of hairs along each hind margin.

Aedeagus gently arcuate and compressed, largely membraneous on the dorsal surface; apical lobe triangular, rounded at the apex; left paramere large, almost as long as aedeagus, subovate, widely translucent at the apical part; right paramere slender, well arcuate, with deeply emarginate membraneous part at the middle on the dorsal margin, apex rounded and weakly swollen.

Type series. Holotype: ♂, Mt. Hsiao-hsüeh Shan, 2,630 m alt., Ta-hsüeh Mts., T'ai-chung Hsien, Taiwan, 15–VI–1989, S. Uéno leg.; allotype: ♀, same data as for the holotype. Paratypes: 7 ♂♂, same locality and date as for the holotype, M. Satô leg.; 1 ♂, same locality as for the holotype, 16–VI–1989, S. Uéno leg.

Further specimens examined. 1 ♂, Mt. Nan-hu-ta Shan, Nan-hu Ch'i, 3,250 m alt., T'ai-chung Hsien, Taiwan, 18–VI–1961, S. Uéno leg.; 1 ♂, Mt. Ho-huan-tung-feng, 3,150 m alt., Nan-t'ou Hsien, Taiwan, 24–VI–1989, M. Owada leg.; 1 ♀, same locality, 25–VI–1989, M. Satô leg.; 1 ♂, 1 ♀, Mt. Kuan-shan-ling-shan, Kuan-shan-ya-k'ou, 2,760 m alt., Kao-hsiung Hsien, Taiwan, 3–VI–1987, S. Kasahara & K. Baba leg.

The holo- and allotypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are separately preserved in the collections of the above museum, the Department of Plant Pathology and Entomology, National Taiwan University, and mine.

Notes. The present new species seems related to *P. davidis*, but may be discriminated from that species by larger body and different elytral coloration. It is readily distinguished from *P. indicus* and *P. unctulus* by different sculpture and coloration of elytra. The elytral features of opisthiines remind us of those of *Elaphrus*, though the characteristics of their male genitalia, especially glabrous parameres, indicate that they are much closer to *Nebria* than to *Elaphrus*.

Paropisthius masuzoi is a highly hygrophilous species, always occurring in very wet places near the timber limit. Sometimes, it is found from under stones half-immersed in the water under small cascades. This makes a sharp contrast with habitats of *P. indicus*, which can be found even in rather dry places of the alpine zone (acc. to Dr. Uéno, pers. comm.).

The type series of *P. masuzoi* is limited to the specimens from Mt. Hsiao-hsüeh Shan, since slight geographical variation can be observed between the type population and others. Mt. Hsiao-hsüeh Shan lies at the southwestern part of the Hsüeh-shan Range, whereas all the other known localities, i.e. Mt. Nan-hu-ta Shan, Mt. Ho-huan-tung-feng and Kuan-shan-ya-k'ou, lie on the Chung-yang Range. Besides, Kuan-shan-ya-k'ou is rather isolated, more than 100 km distant to the south from Mt. Hsiao-hsüeh Shan and nearly 100 km distant even from Mt. Ho-huan-tung-feng.

The present new species is dedicated to the late Professor Masuzo Uéno, who passed away on June 17, 1989, at the age of 89 when his son, Shun-Ichi, was looking for *Paropisthius* on the Ta-hsüeh Mountains. The late Professor Uéno was a leading zoologist in Japan, and he himself made zoological surveys on Taiwanese mountains many years ago.

要約

笠原須磨生：台湾の高山に生息するニセハンミョウ属の1新種．―― ニセハンミョウ類は，マルクビゴミムシ亜科に含まれる特殊な一群で，外見がハンミョウモドキ類に似ている．従来，北アメリカ北西部とヒマラヤを中心とする地域から2属4種が知られていたが，台湾の高山に第5番めの新種の生息することがわかったので，*Paropisthius masuzoi* と命名して記載した．この種は，中国の雲南から報告された *P. davidis* に近縁のものらしく，ヒマラヤのものとはかなり異なっている．なお，新種名は故上野益三博士に捧げられたものである．

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Elytra, *Tokyo*, **17** (2): 119–121, November 15, 1989

Nebria (*Orientonebria*) *coreica* SOLSKY (Coleoptera, Carabidae) in Tochigi Prefecture, Central Japan

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Abstract *Nebria* (*Orientonebria*) *coreica* SOLSKY is recorded from Tochigi Prefecture, Central Japan.

Thirty-seven years ago, UÉNO (1952, p. 57) recorded *Nebria* (*Orientonebria*) *coreica* SOLSKY (1875, p. 254), one of the rare carabid beetles in Japan, from Nagano Prefecture, Central Japan, but he put an interrogation mark for this record in view of the presence of several differences, mainly in the shape of pronotum, in comparison with Harbin specimens. Since that time, this nebriine has been poorly recorded from Japan.

Recently, the second author collected many specimens of this carabid at Watarase Yûsuichi, Tochigi Prefecture, Central Japan. In this short report, we are going to record this carabid and to show its male genital organ.

Nebria (*Orientonebria*) *coreica* SOLSKY

[Japanese name: Chôsen-marukubi-gomimushi]

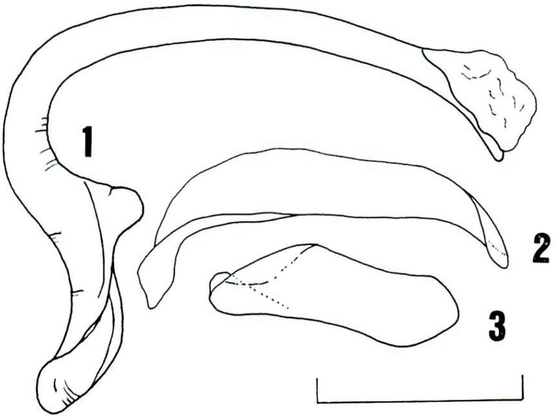
(Figs. 1–3)

Specimens examined. 12 ♂♂, 20 ♀♀, Watarase Yûsuichi, Fujioka-machi, Tochigi Prefecture, Central Japan, 3–V–1988, T. SUDA leg.

Male genital organ is described based on the above specimens.

Aedeagus tubular, slender and strongly sigmoidal in basal 2/5; basal part rather stout with large basal orifice which is widely open and gutter-like; viewed ventrally, apical lobe moderately prolonged and widely rounded at the extremity; right paramere much longer than the left, elongate, with both basal and apical parts strongly curved ventrad; left paramere short and thin.

Judging from the configuration of aedeagus, the Tochigi specimens do not perfectly accord with Siberian ones in having stouter aedeagus, especially at the basal part (according to SHILENKOV's drawing). This, however, seems to fall within the



Figs. 1–3. Male genitalia of *Nebria* (*Orientonebria*) *coreica* SOLSKY from Tochigi Prefecture, left lateral view; 1, aedeagus; 2, right paramere; 3, left paramere. (Scale: 1.00 mm.)

range of variation.

In 1975, SHILENKOV erected the subgenus *Orientonebria* for this species and included in it three other East Asian species, *N. chasli* FAIRMAIRE (1886, Le Naturaliste, **8**, p. 223) from China, *N. chinensis* BATES (1872, Ent. month. Mag., **9**, p. 52) from China, Korea and Japan, and *N. hikosana* HABU(1) (1956, Kontyû, Tokyo, **24**, p. 170) from Kyushu, Japan. However, the male genital organ of *N. coreica*, especially the basal part of its aedeagus, shows some peculiarities and is isolated from those of the latter two species.(2) It is possible that they may be segregated in a subgenus of their own. Because of lack of ample material for comparative study, we prefer to refrain from proposing a new subgenus at the present moment.

In closing this short report, we wish to thank Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kind reading the original manuscript.

要　約

森田誠司，須田　亨：チョウセンマルクビゴミムシの栃木県からの記録．――わが国において採集例の少ないチョウセンマルクビゴミムシ *Nebria* (*Orientonebria*) *coreica* SOLSKY を，栃木県渡良瀬遊水池から記録するとともに，雄交尾器を図示した．また，亜属 *Orientonebria* に関する問題点について，簡単にのべた．

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1) Though described by HABU from Mt. Hiko-san, Fukuoka Prefecture, West Japan, it is usually regarded as a subspecies of *N. reflexa* BATES (cf. UÉNO, 1985).

2) We have been unable to see any specimen of *N. chasli*.

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Elytra, Tokyo, **17** (2): 121, November 15, 1989

対馬のニセコガシラアオゴミムシ

森 田 誠 司

Seiji MORITA: *Chlaenius kurosawai* KASAHARA of the Islands of Tsushima, West Japan

長崎県対馬のアオゴミムシ類については，すでに7種が記録されている．筆者の手元に，未記録と思われるニセコガシラアオゴミムシ *Chlaenius kurosawai* KASAHARA の標本があるのでここに記録しておきたい．

1♂，竜良山，対馬，長崎県，25-VII-1989, M. ITÔ leg.

この個体は，オサムシ用トラップに，多数のオオキベリアオゴミムシ *Epomis nigricans* (WIEDEMANN)，アトボシアオゴミムシ *Chlaenius naeviger* MORAWITZ とともに得られた．とくに珍しい種類でもなく，また近縁のコガシラアオゴミムシ *C. variicornis* MORAWITZ の記録もあることから，対馬の場合にかぎらず，古い記録では両種が混同されている可能性があると思われる．

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Elytra, Tokyo, **17** (2): 122, November 15, 1989

Notes on the Bembidiinae (Carabidae) of Japan

II. *Bembidion shimoyamai* HABU in Hokkaido

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Bembidion shimoyamai HABU (1978, pp. 1–4), one of the most beautiful bembidiines in Japan having reddish legs and strongly bluish lustre on the dorsal surface, was described from Aomori Prefecture, northern Honshu, Japan. After that, it was known only from two localities, Ashiro-machi, Iwate Prefecture (SATAKE & KASAHARA, 1985), and Minakami-machi, Gunma Prefecture (SUDA, 1988). On the other hand, mode of the distribution of bembidiines in North Japan strongly suggested that this species might occur also in Hokkaido, the northernmost main island of Japan. Recently, our expectation was fulfilled by the second author. A pair of individuals of this beetle were found in the island. The collecting data of them are as given below:

1 ♂, 1 ♀, Lake Hangetsu-ko, Kucchan-chô, Hokkaido, 23–IX–1988, H. MATSUMOTO leg.

As was already reported by SUDA (1988), all the individuals hitherto collected, including the type materials, were found from under barks of fallen trees. Also in Hokkaido, the pair of individuals were met with in a similar habitat. Contrary to this, several other species, *Bembidion dolorosum*, *B. morawitzi* and *B. poppii captivorum*, were found from under stones on the lakeside.

Finally, we wish to express our deep gratitude to Dr. Shun-Ichi UENO of the National Science Museum (Nat. Hist.), Tokyo, for reading the manuscript of this paper.

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Elytra, Tokyo, **17** (2): 123–133, November 15, 1989

New Oculate *Trechiama* (Coleoptera, Trechinae) from Miyagi Prefecture, Northeast Japan[1]

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Abstract Three new oculate species of the trechine genus *Trechiama* are described mainly from Miyagi Prefecture, Northeast Japan. All belong to the group of *T. oreas*, and two of them, named *T. namigatai* and *T. tokui*, are closely related to *T. kurosawai* S. UÉNO of the *nivalis* complex. The remaining one, named *T. oniceps*, also resembles members of the *nivalis* complex in chaetotaxial characters, but is markedly different from them in conformation of the inner armature of its male genitalia and probably belongs to another lineage.

Meeting the wishes of the bereaved family, the Japanese Society of Coleopterology has resolved to publish the posthumous manuscript of the late Mr. Toku WATANABE, who passed away on January 14, 1989, at the age of 79. The manuscript is entitled "The Coleoptera of Miyagi Prefecture, Japan," and contains a list of collecting data of beetles in that prefecture chiefly recorded by himself. In this list are included three species of trechine beetles belonging to the genus *Trechiama*, of which only one anophthalmic species was previously described (*T. masatakai* S. UÉNO, 1983, p. 12, figs. 6–7). The two undescribed ones have functional eyes and belong to the group of *T. oreas*, which has not been thoroughly studied as yet. Actually, there is one more undescribed species of the same group, which was discovered on the mountains on the borders of Miyagi, Yamagata and Akita Prefectures, though it is not included in WATANABE's collection.

In the present paper, which is dedicated to the late Mr. Toku WATANABE, I am going to describe these three species under the names of *T. namigatai*, *T. tokui* and *T. oniceps*. The abbreviations used herein are the same as those explained in the previous papers of mine.

I wish herewith to express my hearty thanks first of all to the late Mr. Toku WATANABE, who devoted himself to clarification of the insect fauna of Miyagi Prefecture in which he resided and afforded every facility for us in making field researches. Deep gratitude is also acknowledged to the following friends of mine, who either helped me in the field or offered invaluable specimens for my study: Professor Masataka SATÔ, Professor Yoshiaki NISHIKAWA, Messrs. Seiji MORITA, Huzio NAMIGATA and Masaaki TOMOKUNI.

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[1] This study is supported by the Grant-in-aid No. 63540603 for Scientific Research from the Ministry of Education, Science and Culture, Japan.

Trechiama (s. str.) ***namigatai*** S. Uéno, sp. nov.

(Figs. 1–3)

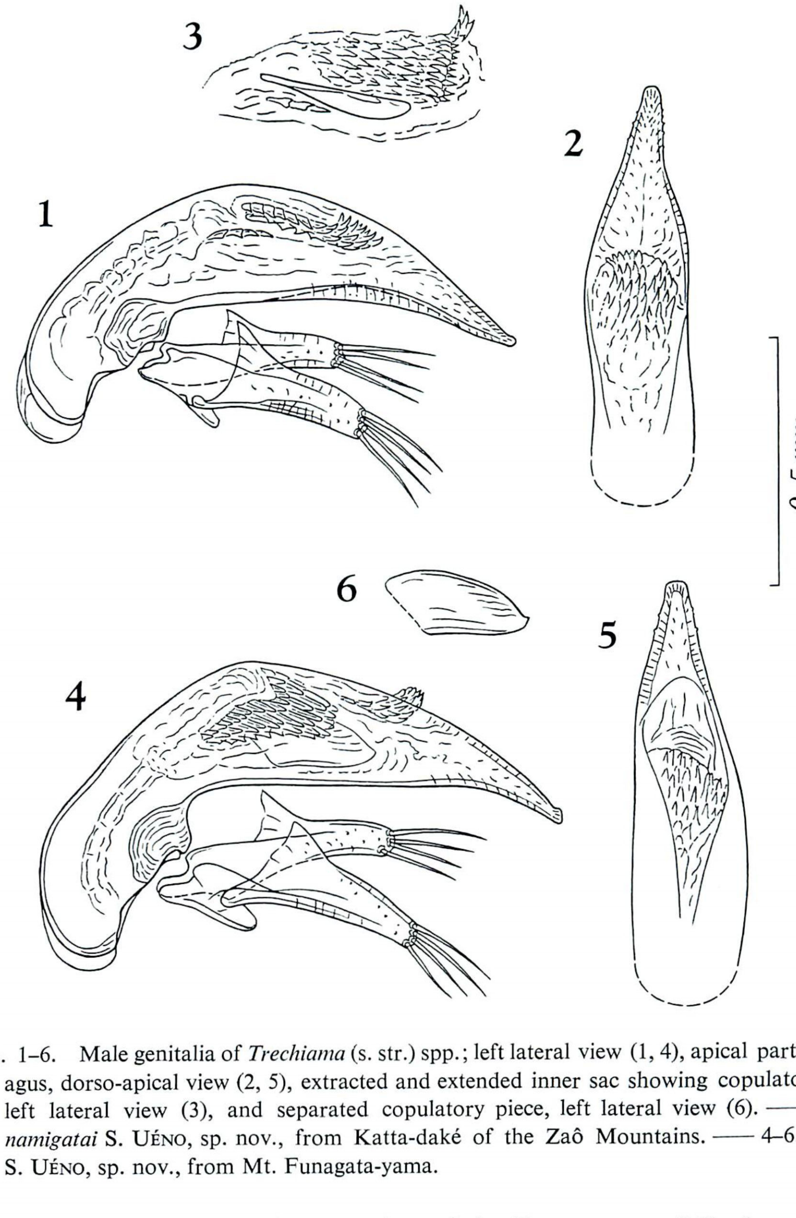
Length: 4.90–5.70 mm (from apical margin of clypeus to apices of elytra).

Almost identical with *T. kurosawai* S. Uéno (1986, p. 140, figs. 8–10) in external morphology, and confidently distinguished from the latter only by difference of male genitalia. Colour as in *T. kurosawai*, though dark individuals sometimes occur. Eyes variable in size, usually longer than genae and sometimes twice as long as the latter, but rarely a little shorter than the latter. Antennae usually reaching basal two-fifths of elytra, though the length is variable to some extent according to individuals. Standard ratios of body parts: PW/HW 1.33–1.48 (M 1.41), PW/PL 1.17–1.27 (M 1.21), PW/PA 1.51–1.63 (M 1.57), PW/PB 1.34–1.47 (M 1.41), PB/PA 1.08–1.17 (M 1.12), EW/PW 1.44–1.56 (M 1.50), EL/EW 1.52–1.62 (M 1.55).

Male genitalia basically similar to those of *T. kurosawai*, but different from the latter in the configuration of aedeagal tube and copulatory piece. Aedeagus about three-tenths as long as elytra, less slender than in *T. kurosawai*, gently compressed, and rather strongly curved ventrad just behind apical orifice, though the left ventral margin forms a thin lamella at the curved part and masks the curvature in left lateral view, with the dorsal margin semicircularly rounded in profile; basal part rather short, moderately curved ventrad, and moderately emarginate at the sides of basal orifice; sagittal aileron fairly large; apical orifice large; viewed laterally, apical lobe curved ventrad and tapered towards the apex, which is slightly reflexed and blunt at the tip; viewed dorsally, apical lobe narrow, slightly inclined to the left, gradually tapered, and blunt at the extremity; ventral margin gently convex at middle in right lateral view, but almost straight in left lateral view. Inner sac armed with a copulatory piece and two patches of sclerotized teeth; copulatory piece very narrow, lying at the right side of dorsal teeth-patch and wholly concealed by the latter, very thin at the proximal part, gradually dilated towards apex, and narrowly rounded at the tip; teeth-patches as in *T. kurosawai*, though the teeth of the ventro-proximal one are more regularly ranged in a horizontal longitudinal row. Styles as in *T. kurosawai*, each bearing usually four, sometimes three setae at the apex.

Variation in elytral chaetotaxy. Of the 29 specimens examined, 4 (3 ♂♂, 1 ♀), or 13.8 %, are aberrant in the number of setiferous dorsal pores on elytra. One (♂) of them has an extra pore on the third stria of the left elytron, another (♂) is lacking in the third pore of the third stria on the right elytron, another (♀) is lacking in the pore of the fifth stria on the right elytron, and the other (♂) possesses a second pore on the fifth stria of the left elytron.

Type series. Holotype: ♂, Katta-daké, 30–VII–1983, S. Uéno leg. Allotype: ♀, Hyôtan-numa, 26–VII–1979, M. Satô leg. Paratypes: 7 ♂♂, 5 ♀♀, Hyôtan-numa, 26–VII–1979, M. Satô & M. Tomokuni leg.; 4 ♂♂, Katta-daké, 23–VII–1976, S. Morita leg.; 2 ♂♂, Katta-daké, 30–VII–1983, S. Uéno leg.; 2 ♂♂, 2 ♀♀, Saémonzawa Migimata, 24–VII–1976, T. Watanabe leg.; 5 ♂♂, Jizô-zan, 17–VIII–1962,



Figs. 1–6. Male genitalia of *Trechiama* (s. str.) spp.; left lateral view (1, 4), apical part of aedeagus, dorso-apical view (2, 5), extracted and extended inner sac showing copulatory piece, left lateral view (3), and separated copulatory piece, left lateral view (6). —— 1–3. *T. namigatai* S. Uéno, sp. nov., from Katta-daké of the Zaô Mountains. —— 4–6. *T. tokui* S. Uéno, sp. nov., from Mt. Funagata-yama.

S. Uéno leg. Preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, except for a pair of the paratypes from Saémon-zawa Migimata, which are in the late Mr. Watanabe's collection.

Localities. Hyôtan-numa (1,600 m alt.) at the northwestern side of Sugi-ga-miné, Katta-daké (1,600–1,620 m alt.; type locality !), Saémon-zawa Migimata (1,200 m alt.), and Jizô-zan (1,450–1,600 m alt.), all on the Zaô Mountains on the borders of Miyagi and Yamagata Prefectures in northeastern Honshu, Japan.

Of the four collecting sites recorded above, only Jizô-zan belongs to Yamagata Prefecture, while all the others lie at the Miyagi side of the Zaô Mountains.

Notes. Though indistinguishable from *T. kurosawai* of the Azuma Volcanoes in external characters, the Zaô population of oculate *Trechiama* must be specifically different from the Azuma one because of evident genitalic differentiation. Most pronounced is the difference in configuration of the copulatory piece, though there are discrepancies between the two also in the shape of the aedeagal tube itself.

Trechiama namigatai seems endemic to the alpine and subalpine zones of the Zaô Volcanoes, which are about 47 km distant to the north-northeast from the Azuma Volcanoes and are separated from the latter by several low places, above all by the valleys of the Matsu-kawa and the Mogami-gawa Rivers. The southernmost known locality is Hyôtan-numa, a marshy place on the northwestern slope of Sugi-ga-miné. The habitat on Katta-daké, the type locality, lies about 2.4 km north-northwest of Hyôtan-numa, and Saémon-zawa Migimata is about 3.5 km distant to the northeast from the type spot. The other collecting site, Jizô-zan, lies at the Yamagata side of the Zaô Volcanoes, and is about 2.5 km distant to the north-northwest from the type spot. At every locality, the trechine beetle is found from under stones lying in humid places shaded by low scrubs, usually at the sides of narrow gullies.

Trechiama (s. str.) ***tokui*** S. UÉNO, sp. nov.

(Figs. 4–6)

Length: 4.90–5.50 mm (from apical margin of clypeus to apices of elytra).

Externally very similar to *T. kurosawai* and *T. namigatai*, and difficult to distinguish from them without examination of male genitalia, but strikingly differing in conformation of aedeagal inner armature. Colour as in *T. kurosawai*. Eyes variable in both size and convexity, usually flat but sometimes moderately convex; genae four-sevenths to five-sevenths as long as eyes. Antennae as in *T. namigatai*, equally variable in length. Pronotum usually with sharper hind angles than in *T. namigatai*. Elytral striae deeply impressed and rather distinctly crenulate, usually deeper than in *T. namigatai*. Standard ratios of body parts: PW/HW 1.34–1.46 (M 1.41), PW/PL 1.17–1.28 (M 1.22), PW/PA 1.51–1.65 (M 1.57), PW/PB 1.36–1.45 (M 1.41), PB/PA 1.06–1.16 (M 1.12), EW/PW 1.45–1.58 (M 1.49), EL/EW 1.51–1.61 (M 1.56).

Male genitalia similar to those of *T. namigatai* in the configuration of aedeagal tube, but slightly larger and markedly different from the latter in the conformation of inner armature. Aedeagus about one-third as long as elytra, much more strongly curved ventrad before middle than in *T. namigatai*, and with more elongate and straightly extending basal part; basal orifice with shallowly emarginate sides; sagittal aileron narrow; viewed laterally, apical lobe gently curved ventrad and dorsally tuberculate at the extremity; viewed dorsally, apical lobe almost symmetrical, relatively broad at the base, and gradually tapered towards the tip, which is somewhat tuberculate; ventral margin distinctly emarginate before apex in lateral view. Inner sac armed with a fairly large copulatory piece and two patches of sclerotized teeth; copulatory piece broad though thin, spatulate, with the apex obtusely angulate; left proximal teeth-patch large, obviously larger than the right dorsal, apically dilated and briefly recurved towards the dorsal side; right dorsal teeth-patch almost horizontal, dilated to the left towards the apex. Styles as in *T. namigatai* though a little slenderer.

Variation in elytral chaetotaxy. Of the 26 specimens of the type series, 4 (3 ♂♂, 1 ♀), or 15.4%, are aberrant in the number of setiferous dorsal pores on the third stria of elytra. Two (1 ♂, 1 ♀) of them have an extra (fourth) pore on the right elytron, while the other two (2 ♂♂) are lacking in the second pore on the right elytron. No aberration is found for the pore on the fifth stria.

Type series. Holotype: ♂, allotype: ♀, 1,240 m alt. on ESE slope, 21–VI–1973, S. UÉNO leg. Paratypes: 11 ♂♂, 3 ♀♀, same collecting data as for the holotype and allotype; 5 ♂♂, 1 ♀, same locality, 16–VII–1977, T. WATANABE leg.; 3 ♀♀, 1,260 m alt. on ESE slope, 21–VI–1973, S. UÉNO leg.; 1 ♂, summit, 3–VII–1976, T. WATANABE leg.; 1 ♀, Senbonmatsu, 21–VI–1973, T. WATANABE leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, with the exception of several paratypes which are preserved in the late Mr. WATANABE's collection.

Type locality. Mt Funagata-yama, on the borders of Miyagi and Yamagata Prefectures in northeastern Honshu, Japan.

All the four collecting sites hitherto known belong to Taiwa-machi in Miyagi Prefecture. Most specimens were taken at two spots on the east-southeastern slope of the mountain, at 1,240 m and 1,260 m in altitude, respectively. One male specimen was taken near the summit at an elevation of 1,480 m, and one female was taken at Senbonmatsu at an elevation of 900 m.

Further specimen examined. 1 ♀, Ohkura, 280 m alt., Miyagi-machi, Miyagi Pref., 25–VII–1978, T. WATANABE leg. (NSMT).

Notes. The three species, *T. kurosawai*, *T. namigatai* and *T. tokui*, form a compact group within the *nivalis* complex, being indistinguishable from one another by external morphology alone. Of these, *T. tokui* is rather isolated from the other two, since the basic pattern of its aedeagal inner armature is quite different from that in the others. This is strange, since the topographical gap between the known ranges of *T. kurosawai* and *T. namigatai* is more decisive than between those of *T. namigatai* and *T. tokui*. Anyway, these three trechines must be derived from a common ancestor, and become differentiated after the eruption of the three recent volcanoes now harbouring the respective species. The relative isolation of *T. tokui* may be ascribed to certain subtle difference in the history of its speciation, though it is difficult to determine it at the present moment.

Mt. Funagata-yama, the type locality of *T. tokui*, is a dormant volcano about 37 km north-northeast of Jizô-zan of the Zaô Volcanoes, which is the northernmost known locality of *T. namigatai*. Only its eastern side has so far been investigated, because it is the easiest way of access to the summit. The trechine beetle has been found in an area from a gully at about 900 m in altitude to just below the summit, but is most abundant at the upper part of a deciduous broadleaved forest above 1,200 m in altitude. There, most specimens were found from under stones lying in a gully, which had no running water on fine days but was always very humid.

It is most probable that the single specimen from Ohkura belongs to *T. tokui*, though it is impossible to identify it conclusively as it is a female. The standard ratios of its body parts are as follows: PW/HW 1.35, PW/PL 1.21, PW/PA 1.56, PW/PB 1.40, PB/PA 1.11, EW/PW 1.52, EL/EW 1.53. The specimen was collected at the side of the Ohkura Reservoir, which is only 280 m above sea-level, a place that seems too low to permanently harbour *T. tokui*. Perhaps this individual had been carried down by a flood of the Ohkura-gawa River from somewhere at the higher part of Mt. Funagata-yama, and was accidentally met by the late Mr. WATANABE.

Trechiama (s. str.) ***oniceps*** S. UÉNO, sp. nov.

(Figs. 7–11)

Length: 5.85–6.50 mm (from apical margin of clypeus to apices of elytra).

Belonging to the group of *T. oreas* and chaetotaxially identical with the members of the *nivalis* complex, but decisively differing from them in basic pattern of aedeagal inner armature.

Obviously larger than any of the known species belonging to the *nivalis* complex. Colour dark brown, shiny, and more or less iridescent on elytra; appendages and ventral surface of hind body reddish brown.

Head small, a little wider than long, and depressed above, with deep entire frontal furrows moderately divergent in front and behind; frons and supraorbital areas gently convex, the latter bearing two pair of supraorbital setae on lines slightly convergent posteriad; microsculpture distinct though fine, mostly consisting of transverse meshes but partially of isodiametric ones; eyes variable in size and convexity, usually flat but sometimes moderately convex; genae very oblique, nearly straight or very slightly convex, four-sevenths to five-sixths as long as eyes; neck wide, with the anterior constriction distinctly marked at the sides; labrum transverse, deeply emarginate at apex though the central portion of apical margin is nearly straight; mandibles slender, moderately arcuate at the apical parts, and sharply pointed at the tips; mentum tooth broad, distinctly bifid at the tip; palpi slender, with penultimate segments gradually dilated towards apices; antennae long and slender, reaching basal four-ninths of elytra in ♂, basal two-fifths of elytra even in ♀, segment 2 about two-thirds as long as segment 3 or 4, segments 5–10 gradually decreasing in length, 8–10 each fully 3.5 times as long as wide, terminal segment the longest though evidently narrower than scape.

Pronotum subcordate, much wider than head, a little wider than long, widest

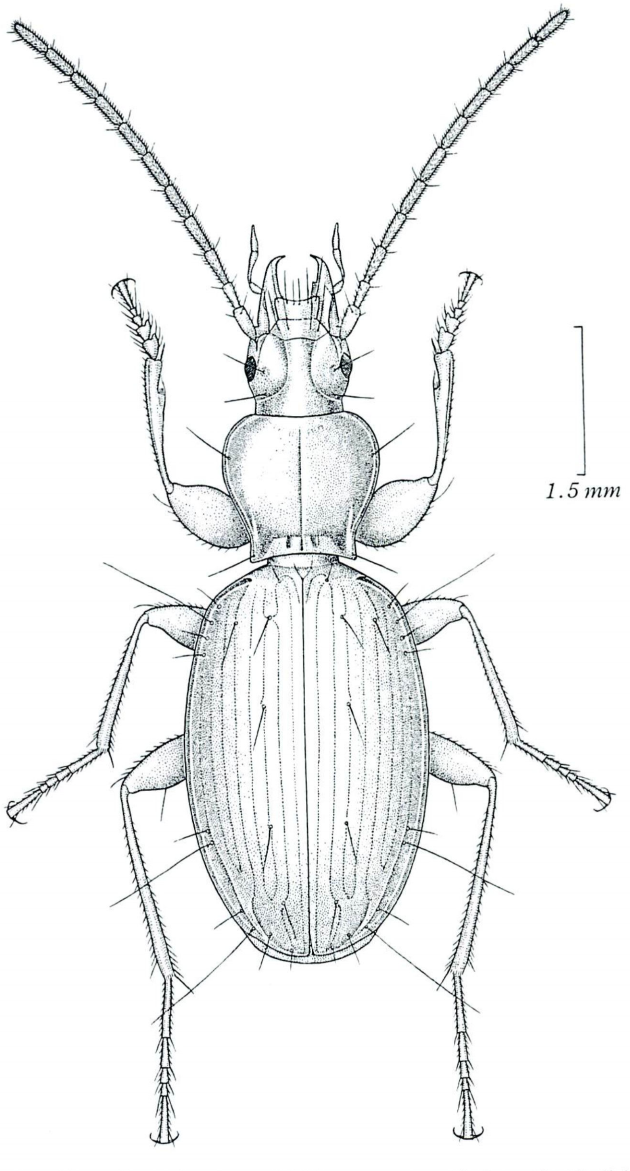


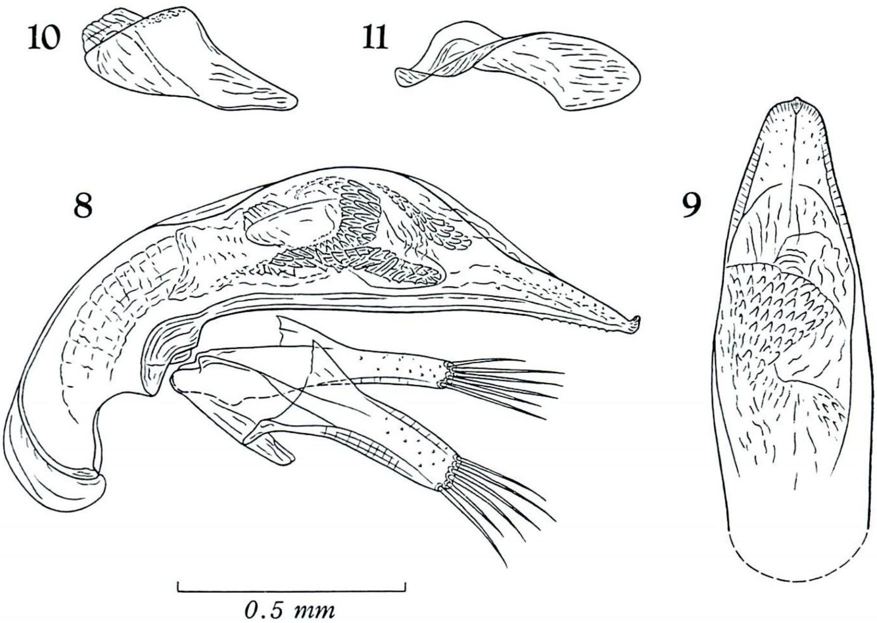
Fig. 7. *Trechiama* (s. str.) *oniceps* S. UÉNO, sp. nov., ♂, from the Onikôbé-tôgé.

at about five-eighths from base, and more strongly contracted towards apex than towards base, with fairly long basal part; PW/HW 1.40–1.48 (M 1.45), PW/PL 1.15–1.20 (M 1.17), PW/PA 1.55–1.64 (M 1.61), PW/PB 1.41–1.48 (M 1.45); sides narrowly reflexed throughout, strongly arcuate in front, less so at middle, deeply sinuate at a level between basal seventh and sixth, and then more or less (usually a little) divergent towards hind angles, which are sharp and gently produced postero-laterad; apex narrower than base, nearly straight or slightly emarginate, with front angles very obtuse and hardly produced; base nearly straight at middle, PB/PA 1.08–1.15 (M 1.11); surface convex, with vague transverse striations; median line sharply impressed, widening in basal area; apical transverse impression vague though bearing distinct longitudinal strioles; basal transverse impression with a distinct foveole on each side of median line and laterally merging into large subtriangular basal foveae, which are deep and smooth at the bottom; postangular carinae sharp and fairly long; basal area more or less uneven; microsculpture mostly formed by fine transverse lines.

Elytra oblong-ovate, much wider than pronotum, widest at about four-ninths from bases, and more gradually narrowed towards bases than towards apices; EW/PW 1.57–1.64 (M 1.59), EL/EW 1.58–1.61 (M 1.59); shoulders obtuse, with prehumeral borders slightly arcuate and evidently oblique at the innermost portions; sides narrowly reflexed throughout, gently arcuate from behind shoulders to the level of the seventh umbilicate pore, then rounded to apices without distinct preapical emargination; each apex almost rectangular; surface moderately convex at the sides but widely depressed on the disc, with the apical declivity rather gentle; microsculpture mostly degenerated, though consisting of fine transverse lines; striae shallow but entire, distinctly crenulate, 1–5 deepened in basal area, 8 deeply impressed behind the middle set of marginal umbilicate pores; scutellar striole distinct though not very long; apical striole short but deep, moderately arcuate, and joining stria 5; intervals slightly convex only near suture; apical carina sharp; stria 3 normally with three setiferous dorsal pores as illustrated, stria 5 with a single setiferous dorsal pore at the same level as the first pore of the internal series; preapical pore located a little behind the level of the terminus of apical striole, and much more distant from apex than from suture; marginal umbilicate pores well aggregated.

Ventral surface smooth; anal sternite with a pair of sexual setae in ♂, with two pair of them in ♀. Legs long and slender; protibiae straight, gently dilated towards apices, longitudinally grooved on the external face, and glabrous on the anterior face even at the apical portion; in ♂, two proximal segments of each protarsus widely dilated and stoutly produced inwards at apices.

Male genitalia small though heavily sclerotized, utterly different from those of the two preceding species in both shape and structure. Aedeagus fully one-third as long as elytra, nearly straight though gradually dilated to behind middle, and widely membraneous on the dorsal surface; basal part elongate, rather abruptly bent ventrad, and deeply emarginate at the sides of basal orifice; sagittal aileron large though hyaline; viewed laterally, apical lobe narrow, very slightly curved ventrad, gradually tapered towards the tip, which is distinctly tuberculate dorsad; viewed dorsally, apical lobe very broad, gradually tapered towards the apex, which is subtruncate and obtusely angulate at the middle; ventral margin very slightly bisinuate in profile. Inner sac armed with a large copulatory piece and two patches of sclerotized teeth; copulatory piece about two-fifths as long as aedeagus, twisted from



Figs. 8–11. Male genitalia of *Trechiama* (s. str.) *oniceps* S. UÉNO, sp. nov., from the Onikôbé-tôgé; left lateral view (8), apical part of aedeagus, dorso-apical view (9), separated copulatory piece, left lateral view (10), and the same, dorsal view (11).

right proximal to left apical, widely lamellar in apical half, and narrowly rounded at the apex, with a fin-shaped, strigate dorsal crest on the left proximal edge; left lateral teeth-patch narrow and very long, sigmoidally curved from dorso-proximal to ventro-apical, though the middle portion is tightly folded inside the long horizontal ventral part *in situ*, and the dorsal portion is curved to the right above the dorsal edge of copulatory piece; right dorsal teeth-patch horizontal and apically dilated to the left. Styles large, left style longer and much broader than the right, each bearing usually five or six, rarely four setae at the apex.

Variation in elytral chaetotaxy. Of the six specimens of the type series, only the holotype has normally developed setiferous dorsal pores on the elytra. The allotype is lacking in the third pore of the third stria on both the elytra. In all the paratypes, setiferous dorsal pores on the third elytral stria are asymmetrical; two of them are lacking in the second pore on the left elytron, one lacking in the third pore on the left elytron, and the remaining one lacking in the third pore on the right elytron. No aberration is found for the pore on the fifth stria.

On the other hand, no chaetotaxial variation is found in the specimens of the Hanadaté-tôgé population. All the six specimens examined have three setiferous dorsal pores on the third stria and one on the fifth on both the elytra.

Type series. Holotype: ♂, 4–VIII–1983, S. UÉNO leg. Allotype: ♀ (somewhat teneral), 3–VIII–1983, Y. NISHIKAWA leg. Paratypes: 4 ♂♂, 3～4–VIII–1983, S. UÉNO leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Onikôbé-tôgé, 670 m in altitude at the northern side, in Ogachi-chô of Akita Prefecture, northeastern Honshu, Japan.

Further specimens examined. 3 ♂♂, 3 ♀♀, Hanadaté-tôgé, 650 m alt. at ESE side, Naruko-chô, Miyagi Pref., 4–VIII–1983, S. UÉNO & Y. NISHIKAWA leg. (NSMT).

Notes. This is an interesting new species not directly related to any of the described members of the species-group. It does not seem to belong even to the two species-complexes hitherto recognized (*oreas* complex and *nivalis* complex), possessing a melange of characters from them. Its true affinity can be clarified when all the *Trechiama* species occurring on non-volcanic mountains in northern prefectures (Iwaté and Akita Prefectures) are brought to light. For instance, a probable close relative of *T. oniceps* occurs on the non-volcanic Mahiru Mountains on the borders of Iwaté and Akita Prefectures, but the upper part of Kurikoma Volcano, which lies only 20 km east-northeast of the Onikôbé-tôgé, is inhabited by a species of the *oreas* complex utterly different from *T. oniceps.*

The type specimens of *T. oniceps* were dug out from colluvia accumulated at the side of a small branch of the Yakunai-gawa River at the northern side of the Onikôbé-tôgé, a pass on the borders of Akita and Miyagi Prefectures. Though this habitat was typically upper hypogean, the trechine beetle does not show any morphological modification adaptive to the subterranean environment. It is probable that the beetle has settled down at the depth of the colluvia, mainly because the locality is on a relatively low mountain.

The specimens from the Hanadaté-tôgé, which lies on the borders of Miyagi and Yamagata Prefectures and is about 13 km south by east of the type locality, agree well with the type series except for a little more elongate aedeagus. Like the Onikôbé-tôgé specimens, they were dug out from a colluvium emplaced at the side of a narrow stream on the east-southeastern slope of the pass. They are 5.75–6.35 mm in the length of the body, and have the following standard ratios: PW/HW 1.39–1.44 (M 1.41), PW/PL 1.12–1.15 (M 1.14), PW/PA 1.59–1.63 (M 1.62), PW/PB 1.45–1.52 (M 1.49), PB/PA 1.06–1.11 (M 1.09), EW/PW 1.54–1.65 (M 1.61), EL/EW 1.57–1.60 (M 1.59).

The specific name of this new species is derived from its type locality, Onikôbé-tôgé, which means the Pass of Oni's Head (=head of Japanese ogre).

要　約

上野俊一: 宮城県に分布する有眼のナガチビゴミムシ類. —— 宮城県の山地では, 有眼のナガチビゴミムシ類がこれまでに3種見つかっている. いずれもイワキナガチビゴミムシ種群のもので, この報文に発表した新名とそれらの産地は次のとおりである.

1. ザオウナガチビゴミムシ *Trechiama* (s. str.) *namigatai* S. UÉNO:— 蔵王山 (杉ケ峰瓢簞沼,

刈田岳，左エ門沢右股，地蔵山）．

2．フナガタナガチビゴミムシ *Trechiama* (s. str.) *tokui* S. UÉNO:— 船形山（頂上，東南東斜面，千本松）．

宮城町大倉の大倉ダム付近で採集された雌の1個体もこの種であろう．おそらく，大倉川の増水によって，下流へ運ばれたものと思われる．

3．オニコウベナガチビゴミムシ *Trechiama* (s. str.) *oniceps* S. UÉNO:— 花立峠［宮城県鳴子町］および鬼首峠［秋田県雄勝町］．

これらのうち，最初の2種はイイデナガチビゴミムシ亜群に属し，吾妻山に固有のクロサワナガチビゴミムシ *T. kurosawai* S. UÉNO に類縁がきわめて近い．3種のあいだに外形上の差異はほとんどないが，雄交尾器，とくに交尾片や歯斑の形態に見られる特徴は，分化が種の段階に達していることを明瞭に示している．この点で，フナガタナガチビゴミムシは，他の2種の場合と少し異なった特性をもつ．いずれにしても，これらのチビゴミムシ類は，それほど古くない時代に共通の祖先から分かれ，新しい火山の高所へ定着することにより隔離されて，急速な分化を遂げたものだろう．

これに対して，宮城県北西端の非火山性山地に局在するオニコウベナガチビゴミムシは，上翅の剛毛式などの特徴ではイイデナガチビゴミムシ亜群のものに似ているが，雄交尾器の構造は特異で，外部形態もかなり違っている．おそらく独立の亜群を形成するものと思われるが，この問題については，より北方の非火山性山地にすむ新種を記載するときに，改めて検討したい．

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Elytra, Tokyo, **17** (2): 134, November 15, 1989

Occurrence of *Trechodes leclerci* (Coleoptera, Trechinae) in Northwest Thailand

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Trechodes leclerci DEUVE (1987, p. 145, figs. 3–4) is an isolated species, characterized above all by remarkably long basal lobe of the prothorax. It was described on a pair of the specimens collected by Ph. LECLERC in Tam Pung Chang at Phangonga in Southwest Thailand.

Late in the spring of 1989, Mr. Minoru TAO took a specimen of a *Trechodes* on Mt. Doi Suthep west of Chiang Mai in Northwest Thailand, and kindly submitted it to me for taxonomic study. It was unfortunately a female, but accorded in every detail with DEUVE's description and illustration of *T. leclerci*. This was most unexpected, since Mt. Doi Suthep is not only distant for more than 700 km from the type locality of the species but is one of the best known collecting places for insects in whole Thailand. All the entomologists who are interested in Thai insects visit the mountain at least once, and I myself am no exception to this. And yet, none of them have ever come across this species up to the present. Anyway, it now becomes apparent that *T. leclerci* is widely distributed on the mountains along the western borders of Thailand.

TAO's specimen is said to have come flying to a light trap set near a stream on the eastern slope of the mountain. Recognizing that it could be a *Trechodes*, he made every effort to collect additional specimens along the stream, but without success. The collecting data of the single specimen taken are as follows:

1 ♀, Mt. Doi Suthep, ca. 800 m alt. on E slope, Changwat Chiang Mai, NW Thailand, 27–V–1989, M. TAO leg. (NSMT).

Reference

DEUVE, Th., 1987. Description de deux Carabiques nouveaux de Nouvelle-Calédonie et de Thaïlande [Coleoptera, Caraboidea, Psydridae, Trechidae]. *Rev. fr. Ent.*, (N. S.), **9**: 143–146.

Elytra, Tokyo, **17** (2): 135–142, November 15, 1989

Discovery of an Eyeless Trechine Beetle (Coleoptera, Trechinae) in Taiwan[1)]

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Abstract An eyeless trechine beetle is recorded for the first time from the Island of Taiwan. It is an endogean species occurring in the subalpine zone of Mt. Hsüeh Shan, the second highest mountain in the subtropical island. It belongs to the *Trechoblemus* series hitherto unknown from Taiwan, and seems to have a relationship to the genus *Oroblemus* S. UÉNO et A. YOSHIDA of Northeast Japan. The new name given is *Masuzonoblemus tristis* S. UÉNO, gen. et sp. nov.

Thirteen species of trechine beetles in a strict sense have hitherto been described from the Island of Taiwan. They are classified into four genera of three different phylogenetic groups, that is *Epaphiopsis*, *Trechiama* and *Agonotrechus* series. All but two of them are wingless, and are confined to the alpine and subalpine zones of the Chung-yang and the Hsüeh-shan Mountain Ranges (cf. UÉNO, 1979, 1980, 1987 a, 1989). However, no eyeless species are included in them, and their existence in Taiwan has been doubted up to now, because we have been unable to find any in Taiwanese caves.

In 1989, the National Science Museum, Tokyo, made a faunal survey of the high mountains of Taiwan in collaboration with National Taiwan University. I was leading the first party which was sent to five mountain areas in June and July. Many trechine beetles were collected during the survey, mostly above 2,500 m in altitude, and though it has not been carefully studied yet, this collection contains thirteen specimens of an eyeless species unexpectedly found in the subalpine zone of Mt. Hsüeh Shan, the second highest mountain in the island.

After a close examination of these specimens, it has become apparent that the trechine beetle in question belongs to the *Trechoblemus* series hitherto unknown from Taiwan. This is more unexpected than the occurrence of an eyeless species itself, because the genus-group is obviously northerly in distribution and does not extend its range even to the Pacific side of Southwest Japan (cf. UÉNO, 1982, p. 73, 1988, pp. 44–47, fig. 5). Still more surprising is that the species seems to bear a relationship to the genus *Oroblemus* S. UÉNO et A. YOSHIDA (1966, p. 77), whose members are localized in a narrow area along the Japan Sea side of Northeast Japan, from the Island of Sado in the southwest to the Oshima Peninsula of Hokkaido in

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1) This study is supported by the Grant-in-aid No. 01041099 for Field Research of the Monbusho International Scientific Research Program, Japan.

the northeast (cf. UÉNO, 1983, 1987 b, pp. 126–131), and not directly related to the genera occurring in Southwest Japan and the Korean Peninsula, though it shows some superficial resemblance to *Daiconotrechus iwatai* (S. UÉNO) (1970, p. 610, figs. 4–6, 1971, p. 183, fig. 1) from the Island of Daikon-jima in Southwest Japan.

Before dealing with the whole collection of the Trechinae made by the first party of the expedition, I am going to introduce this surprising discovery into science and to dedicate the most interesting trechine beetle to my father, the late Professor Masuzo UÉNO, who had always shown deep interest in my study of subterranean animals but unexpectedly passed away on June 17, 1989, at the age of 89, when I was searching for high altitude inhabitants including trechine beetles in the heart of Taiwanese mountains, many of which are difficult of access.

The abbreviations used in this paper are the same as those explained in other papers of mine.

Before going into further details, I wish to express my hearty thanks to Professor Yau-I CHU and Mr. Chiun-chen KER of the Department of Plant Pathology and Entomology, National Taiwan University, for their kind collaboration, and to Professor Masataka SATÔ and Dr. Mamoru OWADA for their support in the field.

Genus ***Masuzonoblemus*** S. UÉNO, nov.

Type species: *Masuzonoblemus tristis* S. UÉNO, sp. nov.

Belonging to the *Trechoblemus* group and related to *Oroblemus* S. UÉNO et A. YOSHIDA of Northeast Japan, but different from the latter mainly in much more reduced eyes and in the possession of semicircular external lamella at the apical part of each copulatory piece.

Body elongate, with small fore-body and fairly large elytra; apterous and depigmented; surface largely covered with short suberect pubescence, though almost glabrous on frons, vertex and lateral parts of venter; appendages not long but fairly slender; colour yellowish brown.

Head fairly large, wider than long, with deep entire frontal furrows not angulate at middle and rather widely divergent in front and behind; two supraorbital pores present on each side, lying on lines subparallel to each other; eyes degenerated and devoid of distinct facets, though their trace usually bears a few vestigial pubescence; genae convex and pubescent. Labrum transverse, widely emarginate at apex, though the central portion of apical margin is either straight or very slightly produced. Mandibles stout, briefly hooked at the acute apices; right mandible very sharply tridentate, left mandible sharply bidentate. Mentum imperfectly fused with submentum, labial suture between them being almost complete; mentum tooth porrect and fairly broad, distinctly emarginate at the tip; submentum with a transverse row of eight setae; ligula subtrapezoidal, subtruncate at the apex which is octosetose; paraglossae long, thin and arcuate; labial palpus fairly thick, with penultimate segment lightly dilated towards apex and quadrisetose, apical segment about as long as the

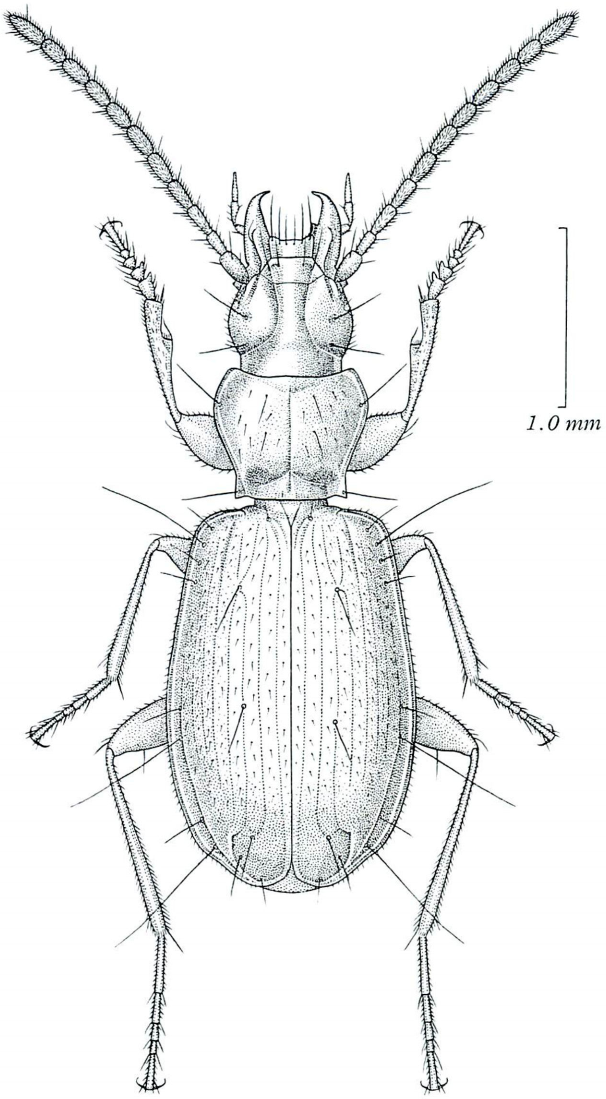


Fig. 1. *Masuzonoblemus tristis* S. UÉNO, gen. et sp. nov., ♂, from San-liu-chiu on Mt. Hsüeh Shan.

penultimate, nearly parallel-sided in proximal half and asetose. Maxillae stout; lacinia with recurved spines and hairs on the inner margin; maxillary palpus fairly stout, penultimate segment widely dilated towards apex and plurisetose, apical segment slightly longer than the penultimate, subconical and asetose. Antennae stout, subfiliform, and hardly dilated towards apices; terminal segment the longest, followed in length by scape, segment 2 about as long as each of segments 8–10 and slightly shorter than the remainings, which are subequal in length to one another.

Pronotum small, subcordate, sparsely covered with short erect pubescence, which becomes vestigial in some individuals, and with two discal setae ranged one behind the other on each side of median line usually before the middle; sides entirely bordered and moderately reflexed, not ciliated except near front angles, where there are a few vestigial hairs, distinctly sinuate before hind angles, which are usually sharp, and with two pair of marginal setae, of which the anterior pair is before the widest part and the posterior is just before hind angles; median line deeply impressed on the disc but neither widening in basal area nor reaching base; apical transverse impression superficial, basal one deep and continuous, laterally merging into deep basal foveae; postangular carinae absent. Scutellum small though distinct.

Elytra oblong-ovate, much wider than pronotum, and without transverse impression on basal peduncle; each interval mostly with one, partially (external ones in particular) with two, irregular row(s) of short suberect pubescence; shoulders square; sides bordered throughout and minutely ciliated, moderately arcuate only behind middle; apices separately rounded; striae entire, distinctly punctate, scutellar striole deep and fairly long, apical striole deep, arcuate, curved inwards at the anterior end and joining stria 3; stria 3 with two setiferous dorsal pores; preapical pore situated at the apical anastomosis of striae 2 and 3, a little more distant from apex than from suture, and obviously closer to apical striole than to suture; marginal umbilicate pores aggregated and almost regular, though the first pore of the humeral set is sometimes a little isolated from the other three.

Ventral surface finely pubescent except for the lateral parts of respective segments; sternites 3–5 each with a pair of setae only; anal sternite with a pair of marginal setae in ♂, with two pair of them in ♀. Legs fairly slender; protibiae very slightly arcuate in apical halves, rather widely dilated towards apices, entirely pubescent, and not externally grooved; tarsi fairly stout, protarsal segments 1 and 2 in ♂ widely dilated, stoutly produced inwards at apices, and furnished beneath with sexual adhesive appendages.

Male genitalia small; aedeagus widely membraneous on dorsum and apically open just behind middle; basal part strongly curved ventrad, with small basal orifice and well developed sagittal aileron; apical lobe simple, long and flattened; inner sac devoid of sclerotized teeth, but armed with two copulatory pieces horizontally lying side by side and half exposed from apical orifice, each piece bearing a minutely tuberculate external lamella at the apical part; styles fairly stout and unequal in length and configuration, each usually bearing four apical setae.

Range. Known so far only from the subalpine zone of the Island of Taiwan.

Notes. In general appearance, the type species of this new genus evidently differs from the members of *Oroblemus*, which have more parallel-sided and depressed bodies. However, it must be related to the latter, especially in view of the similarity of peculiarly formed copulatory pieces. Even the symmetrically developed apicoexternal lamellae characteristic of the Taiwanese species can be formed from apical dilatation of copulatory pieces, as seen in the right copulatory piece of *Oroblemus subsulcipes* S. UÉNO (1983, p. 162, figs. 2–3).

Oroblemites tianshanicus S. UÉNO et PAWŁOWSKI (1981) from the Tian Shan Mountains has hitherto been regarded as the closest relative of *Oroblemus*, but the aedeagal inner armature of the former is utterly different from that of the latter. *Masuzonoblemus* is much closer to *Oroblemus* in this respect, and a common ancestry between them cannot be denied. As was already pointed out, however, there is a very wide geographical gap between their ranges, and the intervening areas are occupied at least by six genera of the same phyletic group. No anophthalmic species belonging to this genus-group have been recorded from Mainland China, in which the Taiwanese species must have originated, but two oculate species of *Trechoblemus* are known from the Yang-zi Jiang basin (cf. SUENSON, 1957, pp. 93–94, pl. 2 above; JEANNEL, 1962, p. 198), a sure indication that the common ancestor of *Masuzonoblemus* and *Oroblemus* once occurred in the same area. It is probable that the ancestral trechines dispersed towards the southeast into Taiwan and towards the northeast into Japan, and that their descendants survive now as relicts, *Masuzonoblemus* and *Oroblemus*, only in two remote areas.

Masuzonoblemus tristis S. UÉNO, sp. nov.

(Figs. 1–3)

Length: 3.25–3.60 mm (from apical margin of clypeus to apices of elytra).

Apterous and anophthalmic; integument thin and translucent; concolorously yellowish brown except for darker mandibles, shiny.

Head fairly large, wider than long, and moderately depressed above, with frons and supraorbital areas moderately convex; microsculpture distinct though not very coarse, consisting of polygonal meshes which are mostly isodiametric but partially wide; anterior supraorbital pore somewhat foveolate, posterior one not adjoining frontal furrow; genae evenly and rather strongly convex, wholly covered with short hairs; neck wide, with the anterior constriction distinctly marked; mandibles stout, broad at the bases and sharply hooked at the apices; antennae reaching basal third of elytra or extending a little beyond that level, segments 8–10 each ovoid and slightly less than twice as long as wide, terminal segment obviously longer but narrower than scape.

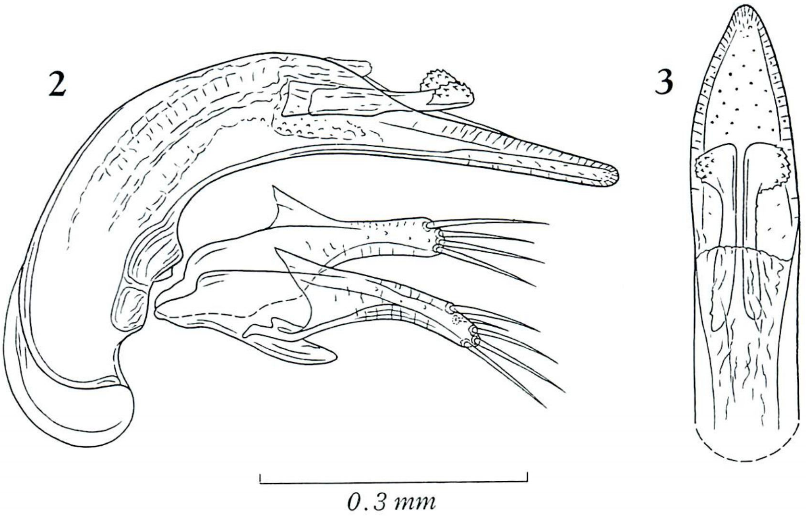
Pronotum rather variable in shape according to individuals, small, subcordate, wider than head, wider than long, widest at about five-sevenths from base, and more gradually narrowed towards base than towards apex; PW/HW 1.15–1.29 (M 1.25), PW/PL 1.18–1.35 (M 1.27), PW/PA 1.34–1.44 (M 1.40), PW/PB 1.30–1.44 (M 1.37); sides either very obtusely subangulate or moderately rounded at the widest part, almost straight or feebly arcuate both in front and behind, distinctly but usually not deeply sinuate at a level between basal eighth and sixth, and then more or less divergent, though not widely, towards hind angles, which are usually sharp and slightly produced postero-laterad but sometimes rectangular; apex about as wide as base, PB/PA 0.99–1.08 (M 1.02), either slightly emarginate, slightly bisinuate or almost straight at middle according to individuals, with front angles more or less produced forwards and narrowly rounded at the tips; base either slightly bisinuate or straight at middle, usually emarginate on each side inside hind angle; surface moderately convex, sparsely covered with short erect pubescence, which remains only partially in some individuals, and more or less rugulose longitudinally in apical area; microsculpture mostly distinct, consisting of fine transverse lines partially forming irregular meshes; basal transverse impression narrow and sulciform though uneven, laterally merging into large semicircular basal foveae, which are deep and vaguely strigose at the bottom; basal area longitudinally strigose.

Elytra oblong-ovate, much wider than pronotum, longer than wide in a similar proportion, widest at about middle, and more gradually narrowed towards bases than towards apices; EW/PW 1.50–1.62 (M 1.56), EL/EW 1.49–1.60 (M 1.54); shoulders square, with prehumeral borders almost perpendicular to the mid-line though slightly curved backwards at the innermost portions; sides either straight or very feebly arcuate behind shoulders, moderately arcuate behind middle, and slightly emarginate before apices, which are separately rounded and form a large re-entrant angle at suture; surface moderately convex at the sides but much less so on the disc, with steep apical declivity; microsculpture mostly distinct, consisting of fine transverse lines; striae deeply impressed, especially on the disc, 1–5 more or less deepened in basal area; apical striole short but deep, rather strongly arcuate, externally bordered by obtuse apical carina; intervals gently convex on the disc, slightly so even at the side; stria 3 with two setiferous dorsal pores at 1/6–1/5 and 1/2–5/9 from base respectively.

Ventral surface and legs as described under the genus; mesotarsal segment 1 obviously shorter than segments 2–4 together but a little longer than segments 2–3 together; metatarsal segment 1 only slightly shorter than segments 2–4 together.

Male genital organ small though moderately sclerotized. Aedeagus nearly one-third as long as elytra, tubular and strongly arcuate in basal half; basal part elongate, with small basal orifice whose sides are deeply emarginate; sagittal aileron large though hyaline; apical lobe long and nearly symmetrical, narrowly rounded at the extremity, narrow, straight and very gradually tapered towards apex in lateral view, broad and with subtriangular apical part in dorsal view; ventral margin distinctly emarginate before middle in profile. Copulatory pieces rod-like, each with a dorso-externally spread, semicircular lamella at the apical part, whose surface is minutely tuberculate in the external portion; right piece about three-tenths as long as aedeagus, and slightly longer than the left. Styles fairly stout, left style longer than the right, each usually bearing four stout setae at the apex though an extra seta rarely occurs on one of the styles.

Type series. Holotype: ♂, 1–VII–1989, S. UÉNO leg. Allotype: ♀, 1–VII–



Figs. 2–3. Male genitalia of *Masuzonoblemus tristis* S. UÉNO, gen. et sp. nov., from San-liu-chiu on Mt. Hsüeh Shan; left lateral view (2), and apical part of aedeagus, dorsal view (3).

1989, M. SATÔ leg. Paratypes: 6 ♂♂, 5 ♀♀, 1–VII–1989, S. UÉNO & M. SATÔ leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. San-liu-chiu on Mt. Hsüeh Shan, 3,580 m in altitude, in T'ai-chung Hsien, Taiwan.

Notes. This interesting new trechine beetle is an endogean species occurring in the subalpine zone of Mt. Hsüeh Shan. On the eastern slope of the main peak, there is a gently slanting area below the largest cirque. It is called San-liu-chiu, and is covered with tall coniferous trees, which keep the moisture of the ground throughout the year. Certain carabid beetles including *Epaphiopsis elegans* S. UÉNO are commonly found in this subalpine forest.

Looking for the *Epaphiopsis*, I came across a pale-coloured trechine beetle running about at the bottom of a hole, which was left after a large embedded stone was taken out. Having realized that it is eyeless, Professor SATÔ and I dug out all large stones deeply embedded in the nearby ground to search for other individuals of the beetle. Our painstaking efforts were repaid with a good success, though the trechine was met only in the immediate vicinity of a small depression. Most specimens were found on the soil beneath large stones, but two or three individuals were running on the surfaces of upturned stones. As a rule, they did not coexist with *Epaphiopsis elegans*, which usually occurred in shallower habitats.

要約

上野俊一：台湾の高山におけるメクラチビゴミムシの発見. —— 台湾の高山からは，これまでに4属13種の狭義のチビゴミムシ類が報告されている. これらは3系統群に区分されるが，いずれも有眼の種類で，複眼の退化したものは含まれていない. ところが1989年の夏に，雪山の亜高山帯の針葉樹林中 (3,580 m 地点) で，土中に深く埋まった大きい石の下から，無眼淡色の小さいチビゴミムシの1種が発見された. この種は，台湾から未記録のアトスジチビゴミムシ群に属し，しかも，日本北東部の日本海側に分布するキタメクラチビゴミムシ属 *Oroblemus* に類縁の近いものである. したがって，この新種が発見されたことは，単に分類学的な興味にとどまらず，生物地理学的にもきわめて重要な意義をもつので，ほかの採集品の検討に先だって記載し，*Masuzonoblemus tristis* S. UÉNO と命名して，調査旅行中に急逝した父，益三に捧げた.

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Elytra, Tokyo, **17** (2): 143–146, November 15, 1989

A New *Apatrobus* (Coleoptera, Carabidae) from the Suzuka Mountain Range, Central Japan

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Abstract A new patrobine carabid beetle, *Apatrobus narukawai* sp. nov., is described from the Suzuka Mountain Range, Central Japan. It is related to *A. iwasakii* MORITA, but differs from it mainly in the shape of pronotum and the configuration of male genitalia.

In the spring of 1980, a medium-sized patrobine carabid beetle was obtained by Mr. Nobuyuki NARUKAWA at the Sakamoto-dani Valley of the Suzuka Mountain Range, Central Japan. He submitted this beetle to me for taxonomic study. An examination of its genitalia proved that though closely related to *A. iwasakii* MORITA (1987, pp. 36–40), it was no doubt new to science. Recently, I had an opportunity to visit the valley with him and succeeded in obtaining many additional specimens at the collecting site.

In this paper, I am going to describe it under the name of *A. narukawai*. The abbreviations used herein are the same as those explained in my previous papers.

Apatrobus narukawai MORITA, sp. nov.

[Japanese name: Suzuka-nurechi-gomimushi]

(Figs. 1–7)

Length: 8.55–9.75 mm (from apical margin of clypeus to apices of elytra).

Colour somewhat darker than in *A. iwasakii*. Head large, wide and convex; frontal furrows wide and moderately deep with rather coarse punctures; lateral grooves deep but short; anterior supraorbital pores located at the mid-eye level; posterior ones apart from posterior margin of eyes and close to neck constriction, which bears coarse punctures; mandibles rather short and stout; apical margin of labrum somewhat emarginate or almost straight; mentum tooth bifid; antennae rather short, reaching basal fourth of elytra, segment 2 usually with four setae, rarely three; relative lengths of antennal segments as follows: I: II: III: IV: V: VI: XI≒1: 0.47: 1.43: 0.94: 0.89: 0.86: 1.13.

Pronotum quadrate, moderately convex, widest at apical third; PW/HW 1.28–1.39 (M 1.36) in 10 ♂♂, 1.30–1.38 (M 1.34) in 8 ♀♀, PW/PL 1.28–1.38 (M 1.32) in 10 ♂♂, 1.27–1.37 (M 1.30) in 8 ♀♀, PW/PA 1.35–1.43 (M 1.34) in 10 ♂♂, 1.33–1.42 (M 1.38) in 8 ♀♀, PW/PB 1.28–1.39 (M 1.32) in 10 ♂♂, 1.26–1.33 (M 1.30)

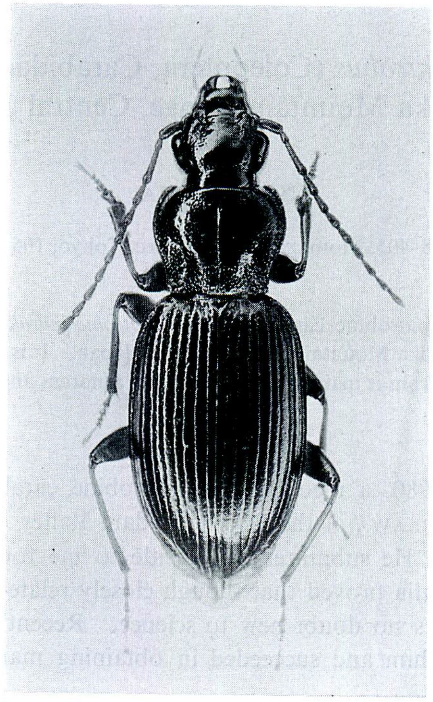
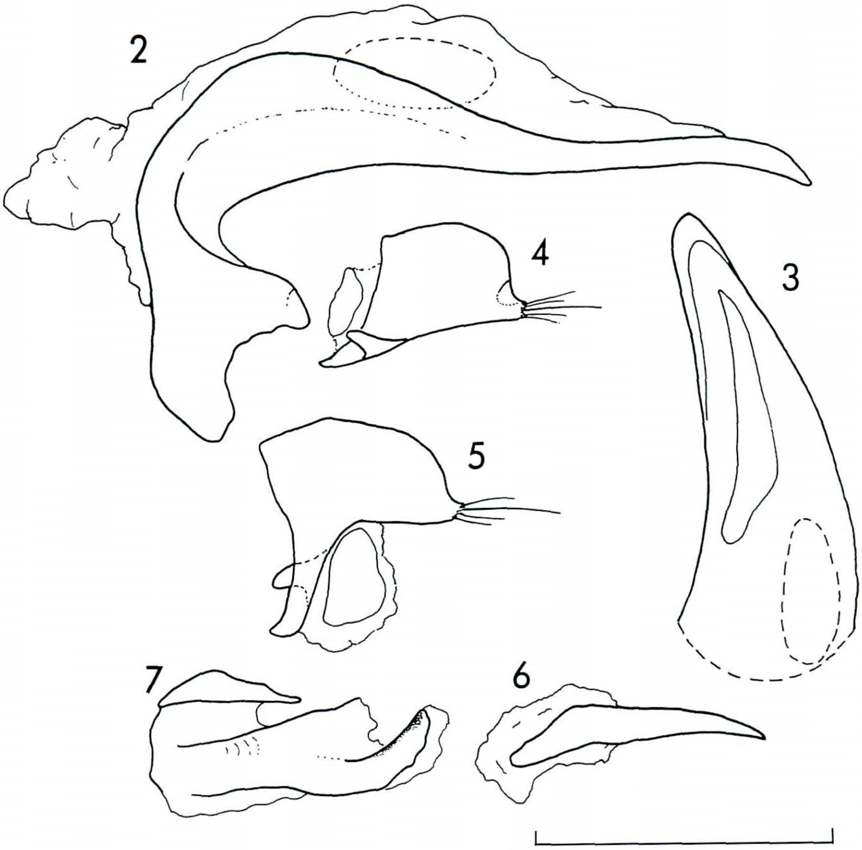


Fig. 1. *Apatrobus narukawai* Morita, sp. nov., ♂, from the Sakamoto-dani Valley in Fujiwara-chô, Mie Prefecture.

in 8 ♀♀, apex weakly emarginate, usually a little narrower than base, PA/PB 0.90–1.00 (M 0.95) in 10 ♂♂, 0.88–0.98 (M 0.94) in 8 ♀♀; sides rather strongly arcuate in front, weakly sinuate behind and then parallel before hind angles; reflexed lateral borders gradually becoming wider both from the level of anterior marginal setae to apical angles and in the parallel-sided parts; apical angles produced and widely rounded, hind angles rectangular or a little sharp without carina; anterior transverse impression very shallow, though bearing coarse punctures; anterior marginal setae inserted a little before the widest part, with no additional seta, posterior ones inserted just before and inside hind angles; median line deep, becoming widened near base; basal foveae large and deep with coarse punctures; basal area between the foveae and the median line with coarse punctures and wrinkles.

Elytra elongated ovate, widest at about or a little before middle; EW/PW 1.30–1.38 (M 1.34) in 10 ♂♂, 1.32–1.37 (M 1.35) in 8 ♀♀, EL/EW 1.54–1.64 (M 1.58) in 10 ♂♂, 1.55–64 (M 1.59) in 8 ♀♀; surface convex though rather depressed at the basal part; shoulders rounded, less oblique than in *A. iwasakii*; intervals slightly convex with minute punctures which are coarser and denser than in *A. iwasakii*; scutellar striole short; striae rather deep, distinctly though coarsely punctate, becoming shallower near apices; three dorsal pores on interval 3, anterior two adjoining stria 3, and posterior one usually adjoining stria 3, rarely lying on interval 3.



Figs. 2–7. Male genitalia of *Apatrobus narukawai* MORITA, sp. nov. —— 2. Aedeagus, left lateral view. 3. Apical part of aedeagus, dorsal view. 4. Separated right style, left lateral view. 5. Separated left style, left lateral view. 6. Separated apical copulatory piece, ventral view. 7. Separated proximal copulatory piece, ventral view. (Scale: 1.00 mm.)

Variation in elytral chaetotaxy. Of the 22 specimens of the type series, 1 ♂ and 1 ♀, or 9.1%, are aberrant in the number of dorsal pores on the elytra, that is, they have an additional pore on the right elytron at basal fifth and sixth, respectively.

Apex of prosternum sparsely punctate; prepisternum, prepimeron, mesosternum, mesepisternum and metepisternum with coarse punctures; sides of metasternum sparsely punctate; in ♀, anal sternite with two pair of setae on a straight transverse line.

Microsculpture of pronotum partially slightly visible, forming transverse meshes; that of elytra distinct, forming wide or almost isodiametric meshes.

Male genital organ basically similar to that of *A. iwasakii*; aedeagus moderately sclerotized and bent at about 90 degrees at the basal fourth; lateral walls reduced at apical halves; viewed dorsally, apical half inclined to the right and gradually tapered towards apex, which is very narrowly rounded; viewed laterally, apical part curved ventrad; inner sac armed with two copulatory pieces and a teeth-patch; apical copulatory piece heavily sclerotized, spine-like, pointed at apex, broader than in *A. iwasakii*, and obliquely truncated at left proximal corner; proximal copulatory piece lightly sclerotized, rather elongate and strongly rolled with a long and arcuate projection which is produced to the left; teeth-patch lies at the middle of inner sac along the left wall, consisting of heavily sclerotized teeth; styles rather poorly sclerotized, each bearing four or five setae.

Type series. Holotype: ♂, allotype: ♀, 29–IV–1989, S. MORITA & N. NARUKAWA leg.; 1 ♂, 26–IV–1980, N. NARUKAWA leg.; 9 ♂♂, 10 ♀♀, 29–IV–1989, S. MORITA & N. NARUKAWA leg.

The holo- and allotypes are preserved in the National Science Museum (Nat. Hist.), Tokyo.

Type locality. Sakamoto-dani Valley in Fujiwara-chô, Mie Prefecture, Central Japan.

Notes. This new species is closely allied to *A. iwasakii*. It is, however, distinguished from it by the following points: 1) head with coarse punctures; 2) pronotal sides more strongly arcuate in front and deeply sinuate behind; 3) apical angles of pronotum widely rounded; 4) elytra with less oblique shoulders; 5) apical copulatory piece broad and obliquely truncated at the left proximal corner; and, 6) proximal copulatory piece with a long and arcuate projection which is produced to the left.

The type locality of this new species is about 75 km distant to the southwest from that of *A. iwasakii*.

In concluding, I wish to thank Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in reading the original manuscript. My thanks are also due to Mr. Nobuyuki NARUKAWA for his kind help in the field.

要　約

森田誠司：鈴鹿山脈産ヌレチゴミムシの1新種．—— 鈴鹿山脈で採集されたヌレチゴミムシを，おもに前胸背板の外形，雄交尾器の内部構造から新種と認め，スズカヌレチゴミムシ *Apatrobus narukawai* と命名した．この新種は，岐阜県根尾村のイワサキヌレチゴミムシ *A. iwasakii* にもっとも近縁のものと考えられる．

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Elytra, Tokyo, **17** (2): 147–152, November 15, 1989

A New Pterostichine Carabid Beetle from the Island of Kyushu, Southwest Japan

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Abstract A new pterostichine carabid beetle, *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., is described from the central mountains of the Island of Kyushu, Japan. It is so unique that none of its allies have hitherto been known, and is probably endemic to those mountains.

There occurs an unnamed pterostichine carabid beetle belonging to the subgenus *Pterostichus* (sensu TANAKA, 1985, p. 113) on the central mountains of the Island of Kyushu, Southwest Japan. It was first found more than twenty years ago by the junior author on Mt. Sobo-san in Ôita Prefecture, but was not satisfactorily studied for a long time. In the early summer of 1984, we made a collecting trip to those mountains for the purpose of investigating the carabid fauna, and found the same species on Mt. Hakuchô-zan in Kumamoto Prefecture. Several days later, the senior author obtained it also at the Shiiya-tôge, the highest pass at the central part of the mountains, on the borders of Kumamoto and Miyazaki Prefectures. These new localities lie about 50 km southwest of Mt. Sobo-san.

The pterostichine in question is very interesting in having a peculiarly shaped aedeagus, which bears a membraneous elliptic fenestra or a "window" at the middle of the ventral surface. No allied species with such a peculiarity have hitherto been known from Kyushu and its surroundings. In the following lines, we are going to describe and illustrate it under the name of *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov. The abbreviations used herein were already explained in previous papers of the senior author.

Before going further, we wish to express our deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his advice and for reading the manuscript of this paper. Our thanks are also due to Mr. Shôichi IMASAKA of Shimabara City for his kind support of our investigations in Kyushu.

Pterostichus* (*Pterostichus*) *fenestratus sp. nov.

[Japanese name: Sobo-nagagomimushi]

(Figs. 1–3)

Description. Length (measured from apex of labrum to apices of elytra) 13.3–14.6 mm. Width 4.4–4.9 mm.

Elongate, rather flat, shiny, dark reddish brown to black; labrum, antennae, femora and tibiae dark reddish brown, palpi and tarsi reddish brown; venter dark reddish brown to blackish.

Head gently convex; eyes small, though convex; temporae gently swollen, almost as long as eyes; genae smooth or feebly rugose near buccal fissures; frontal furrows distinct, divergent posteriad, and reaching the level of anterior supraorbital setae; supraorbital areas convex in front; clypeal suture fine; lateral grooves deep, extending to the level of posterior supraorbital setae, which are fairly distant from the post-eye level; mandibles relatively long; apical margins of both labrum and clypeus emarginate; antennae rather long, extending to the basal third of elytra; relative lengths of scape and segments 2–6 as follows:— 1: 0.65: 1: 1.15: 0.95: 0.95; segment 2 ventrally unisetose at apex; surface very minutely and sparsely punctate; microsculpture visible, formed by fine irregular meshes.

Pronotum cordate, rather flat, widest at about apical fourth, ca. 1.3 times as wide as head (PW/HW 1.24–1.32, mean 1.28), ca. 1.26 times as wide as long (PW/PL 1.22–1.34, mean 1.26), ca. 1.4 times as wide as base (PW/PBW 1.39–1.48, mean 1.43); lateral margins evenly well arcuate in anterior halves, then strongly convergent posteriad and fully sinuate before base, basal part more or less dilated posteriad; apical margin emarginate, not bordered; apical angles produced, rounded at the tips; basal margin narrower than the apical, widely emarginate at the median part, more or less oblique and vaguely bordered on each side; basal angles rectangular; basal foveae distinct, with linear impressions at the bottoms, divergent anteriad, deepening in the basal parts, almost smooth, though often with transverse rugosities and punctures; median line deep; both apical crescent and basal transverse depressions weak or obsolete; surface smooth, though often with irregular transverse wrinkles; microsculpture visible, formed by fine transverse meshes.

Apterous. Elytra oblong-subovate, relatively flat, faintly iridescent, widest at about middle, ca. 1.3 times as wide as pronotum (EW/PW 1.24–1.35, mean 1.29), ca. 2.7 times as long as pronotum (EL/PL 2.62–2.87, mean 2.74), ca. 1.7 times as long as wide (EL/EW 1.65–1.77, mean 1.69); basal border curved, obliquely extending to shoulder, and joining lateral border at a very obtuse angle; shoulders rounded; lateral margins gently divergent from behind shoulders to the widest part, then gently and roundly convergent to preapical emarginations, which are shallow, and rounded at apices; sutural angles obtuse, rounded at the tips; inner plica invisible; scutellar striole short, lying on interval 2, arising from basal pores at the base of stria 2; striae moderately impressed, almost smooth, or feebly notched at the bottoms; intervals

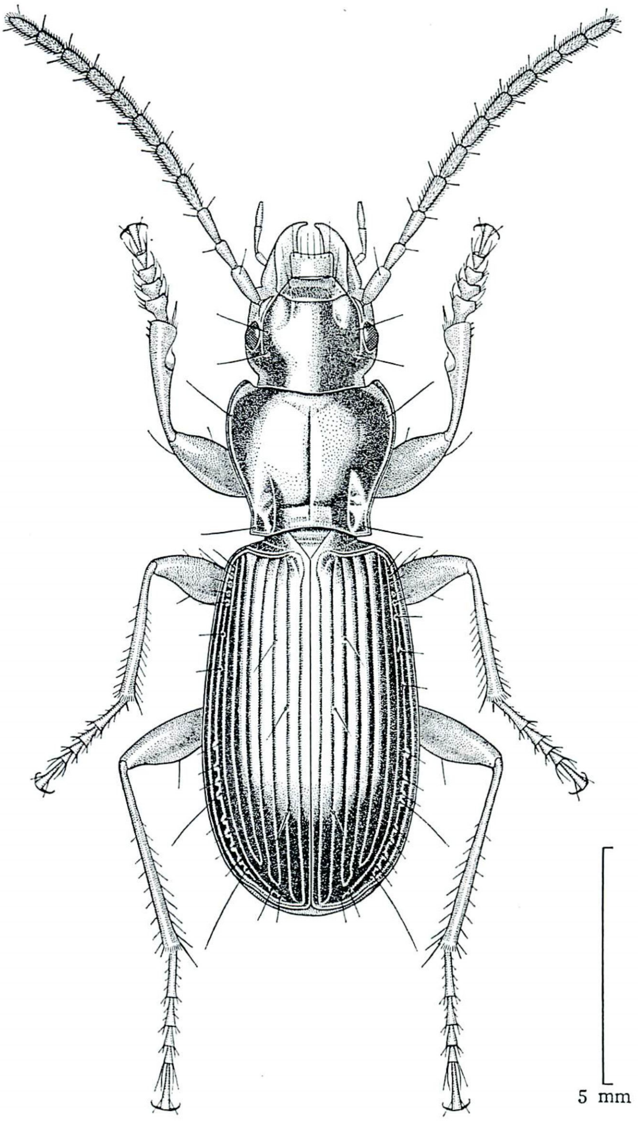

Fig. 1. *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., ♂, from Mt. Sobo-san in Ôita Prefecture.

convex; interval 3 with three dorsal pores, anterior one at about basal fourth and adjoining stria 3, while the posterior two adjoin stria 2 at about middle and apical fourth, respectively; marginal series of pores 16–17 in number, widely spaced at middle; microsculpture formed by fine transverse meshes.

Basal three segments of meso- and metatarsi externally sulcate. Venter almost smooth, shiny; prosternal process shallowly furrowed at middle, bordered at apex;

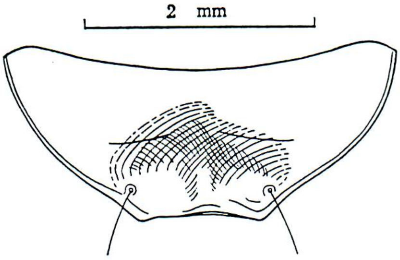

Fig. 2. Terminal sternite in the male of *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., from Mt. Sobo-san in Ôita Prefecture.

terminal sternite in the male widely depressed in apical half, its apical margin widely truncated at middle, each side of the truncation more or less angulate and produced.

Aedeagus strongly bent at basal third, then abruptly and widely tumid on the right ventral side at middle, and gently bent downwards at apical fifth, with rounded apex; ventral surface with a membraneous elliptical fenestra at the middle, its right anterior margin adjoining a distinct carina; another short but distinct carina present, running parallel to the ventral one on the right side at apical third; left paramere widely arcuate at apex; right one stout, rounded at apex.

Type series. Holotype: ♂, Mt. Sobo-san, Ôita Pref., 2–V–1964, N. OHTANI leg.; allotype: ♀, same data as for the holotype. Paratypes: 2 ♂♂, same data as for the holotype; 3 ♂♂, 6 ♀♀, same locality as for the holotype, 1–V–1967, N. OHTANI leg.; 3 ♂♂, 1 ♀, same locality, 2–V–1967, N. OHTANI leg.; 1 ♂, same locality, 26–VIII–1968, N. OHTANI leg.; 1 ♂, same locality, 27–VIII–1968, N. OHTANI leg.

Other specimens examined. 1 ♂, Mt. Hakuchô-zan, Gokanoshô, Kumamoto Pref., 17–VI–1984, S. KASAHARA & N. OHTANI leg.; 2 ♂♂, 1 ♀, Shiiya-tôge, Kumamoto Pref., 21–VI–1984, S. KASAHARA & S. IMASAKA leg.

The holo- and allotypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are separately preserved in our collections.

Notes. The present new species is easily discriminated from all the other pterostichine species known from Kyushu not only by rather flattened facies with widely truncated terminal sternite in the male but also by peculiar conformation of aedeagus. Only the other Japanese species hitherto known to bear a membraneous fenestra on the ventral surface of its aedeagus is *P.* (*P.*) *mirificus* BATES, widely distributed in northeastern Honshu and the southernmost part (Oshima Peninsula) of Hokkaido.

This membraneous fenestra seems to have been formed for receiving the apex of the left paramere, since the latter closely fits the former in repose. In *P. mirificus*, its circumference is clearly defined by sclerotization, so that its size is almost constant. In *P. fenestratus*, on the other hand, circumference of the fenestra is not sharply marked, and its extent varies with individuals, sometimes occupying a fairly large

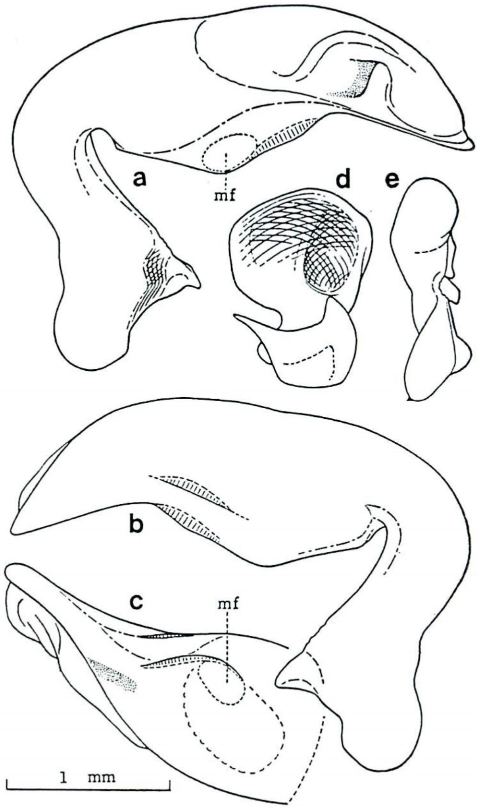

Fig. 3. Male genitalia of *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., from Mt. Sobo-san in Ôita Prefecture; a–c, aedeagus: a, left lateral view; b, right lateral view; c, apical half in ventral view; d, left paramere; e, right paramere; mf, membraneous fenestra, outer broken line in c shows its maximum extent.

part of the ventro-median surface of aedeagus.

So far as we have investigated, *P. fenestratus* seems to be confined to the central mountains of Kyushu. Judging from the distributional pattern of other pterostichines, however, its close relatives may occur at the southwestern part of the Island of Shikoku (cf. KASAHARA, 1985, pp. 49–57).

要　約

笠原須磨生・大谷規夫：九州山地産ナガゴミムシ属（オサムシ科）の1新種．—— 九州大分県の祖母山から，ナガゴミムシ属の1新種ソボナガゴミムシ *Pterostichus* (*Pterostichus*) *fenestratus* を記載した．本種は，体がやや扁平で，雄の腹部末端節腹板の後縁が幅広く切断状を呈し，外形的特徴からも容易に九州産の他種から識別できる．さらに特異な点は，陰茎の下面に，楕円形膜質の窓 (fenestra) をもつことで，このような特徴をもつ種は，日本ではほかにただ1種，本州北東部に広く分布し北海道の渡島半島にも見られる，フタトゲナガゴミムシ *P.* (*P.*) *mirificus* BATES が知られるのみである．

ソボナガゴミムシの存在は，かなり以前から一部で知られていたが，近年におけるわれわれの調査で，熊本県五家荘の白鳥山附近と椎矢峠でも発見され，九州山地の中央部に広く分布することが判明

した．現在のところ，本種はこの地域に固有と考えられるが，これまでの分布上の知見から推測して，近縁種が四国南西部から発見される可能性もある．

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Elytra, Tokyo, **17** (2): 152, November 15, 1989

ヤマトモリヒラタゴミムシ四国に産す

笠原須磨生・伊東善之

KASAHARA, S., & Y. ITÔ: Occurrence of *Colpodes yamatonis* (Carabidae) in the Island of Shikoku, Southwest Japan

ヤマトモリヒラタゴミムシ *Colpodes* (*Oncostylus*) *yamatonis* (HABU) は，紀伊半島の奈良，和歌山両県に分布し，最近，東海の愛知県北東部からも記録されたが（笠原，1988*），四国からは未知であった．筆者らは，本種の高知県産 1♂ の標本を確認し，四国南東部にも分布することがわかったので記録しておく．

1♂，高知県物部村西熊山（標高，1,120 m），10–X–1986，伊東善之採集．

なお，本種に近縁のホソモリヒラタゴミムシ *C.* (*O.*) *speculator* HAROLD は，四国に分布することが知られているが，高知県本川村大森に産する個体群のなかに，前胸背板の形態が *C. yamatonis* に似て，ややまぎらわしい個体があることをあわせて報告する．

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* 笠原須磨生，1988，甲虫ニュース，(83/84)：10.

Elytra, Tokyo, 17 (2): 153–157, November 15, 1989

A New Species of the Genus *Stenolophus* (Coleoptera, Carabidae) from Central Japan

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Abstract A new harpaline carabid beetle, *Stenolophus* (*Stenolophus*) *taoi* sp. nov., is described from the Kwantô District of central Honshu, Japan. It resembles *S.* (*S.*) *agonoides* BATES in general appearance, and is often found in coexistence with the latter, but is clearly distinguished from that species by the body evidently smaller in size with less convex eyes, and by differently shaped male genitalia.

Fifteen species of the harpaline genus *Stenolophus* have hitherto been known from Japan. Of these, five belong to the subgenus *Stenolophus*, which is characterized by the bare ventral surface of the fifth tarsal segment. In 1983, a pair of the examples of an apparently unnamed species of the subgenus were found with *S. agonoides* BATES by myself in the western suburbs of Tokyo. Since then, Mr. Minoru TAO has keenly looked for it, and finally succeeded in obtaining many examples at various localities in the Kwantô District.

This small-sized harpaline species is similar to *S. agonoides* in general appearance, but is clearly discriminated from the latter by the body evidently smaller in size, with less convex eyes and differently shaped pronotum, and by different configuration of genitalia in the male, and seems to be new to science. In the following lines, I will describe it under the name of *S.* (*Stenolophus*) *taoi* sp. nov. The abbreviations used herein were already explained in previous papers of mine.

Before going further, I wish to express my sincere thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his advice and for reading the manuscript of this paper, and to Mr. Minoru TAO, for his kind support in providing with materials.

Stenolophus* (*Stenolophus*) *taoi KASAHARA, sp. nov.

[Japanese name: Tao-mame-gomokumushi]

(Figs. 1–2, 4)

Description. Length (measured from apices of closed mandibles to those of elytra) 4.85–5.70 mm. Width 1.85–2.17 mm.

Black, shiny, and iridescent; labrum and mandibles brown, though the median part of the former and apices of the latter blackish; palpi, basal two segments of antennae, and lateral margins of both pronotum and elytra brownish yellow, the pale

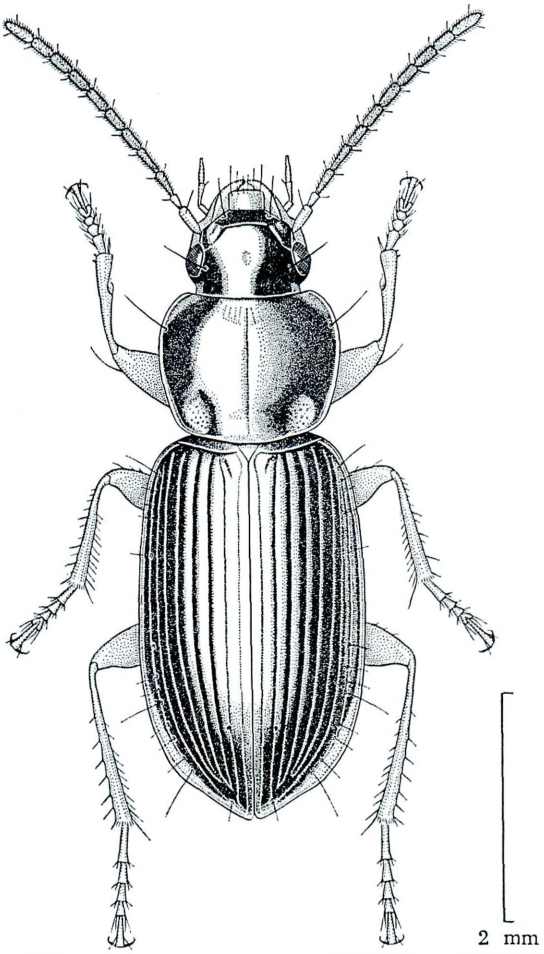
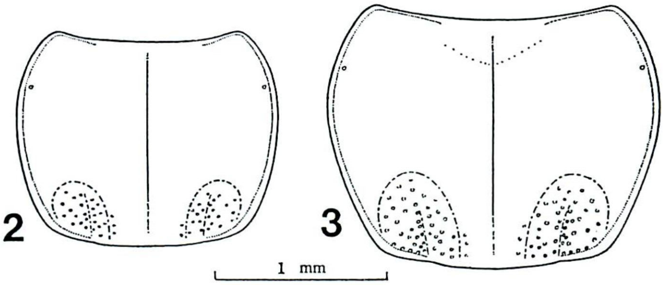


Fig. 1. *Stenolophus* (*Stenolophus*) *taoi* KASAHARA, sp. nov., ♂.

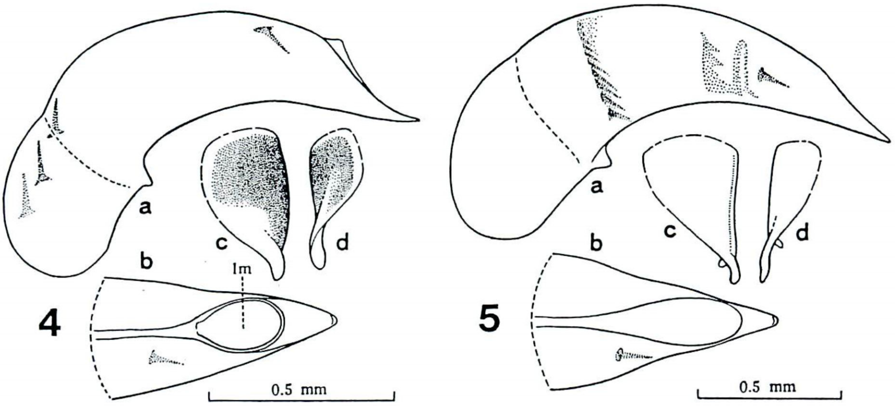
coloration widely expanded in the latero-apical parts of elytra; elytral interval 1 usually brownish; venter blackish, shiny, and iridescent.

Head less shiny due to isodiametric microsculpture, which is more distinct than in *S. agonoides*; eyes less convex than those of *agonoides*, often rather flat in the female; vertex usually with a vague foveole; outer sides of oblique frontal furrows with short furrows running parallel to the ordinary ones as in *agonoides*.

Pronotum transverse, widest at about apical third, ca. 1.4 times as wide as head (PW/HW 1.39–1.50, mean 1.43), ca. 1.3 times as wide as long (PW/PL 1.27–1.43, mean 1.34); lateral margins evenly arcuate in apical halves, gently and more or less roundly convergent from the widest part to base, less strongly and more roundly convergent to base than in *agonoides*; lateral grooves extending onto lateral parts of



Figs. 2–3. Pronota of *Stenolophus* (*Stenolophus*) spp. —— 2, *S.* (*S.*) *taoi* KASAHARA, sp. nov.; 3, *S.* (*S.*) *agonoides* BATES.



Figs. 4–5. Male genitalia of *Stenolophus* (*Stenolophus*) spp. —— 4, *S.* (*S.*) *taoi* KASAHARA, sp. nov.; 5, *S.* (*S.*) *agonoides* BATES; a–b, aedeagus: a, left lateral view; b, apical half in dorsal view; c, left paramere; d, right paramere; lm, lamina.

base as in *agonoides*; basal angles more widely rounded, much less defined, than those of *agonoides*; basal foveae shallow, punctate, as in *agonoides*.

Elytra ca. 1.3 times as wide as pronotum (EW/PW 1.24–1.33, mean 1.29), ca. 2.7 times as long as pronotum (EL/PL 2.61–2.91, mean 2.73), ca. 1.6 times as long as wide (EL/EW 1.50–1.65, mean 1.58); elytral coloration more apparently bipartite than in *agonoides*, the fulvescent latero-apical parts in particular being wider than in *agonoides*. Terminal sternite in the male punctate and pubescent, and with two pair of marginal setae as in *agonoides*.

Aedeagus slenderer than that of *agonoides*, gently arcuate, and tapering towards apex, apical lobe as long as wide, and with rounded apex; apical aperture covered by an elliptic lamina as in the species of the subgenus *Astenolophus*, though it is absent in *agonoides*; inner sac containing three to four copulatory pieces in basal part and usually one in apical part; both left and right parameres usually fuscous in apical halves, while they are not so tinged in *agonoides*.

Type series. Holotype: ♂, Niiharu-chô, Yokohama City, Kanagawa Pref., 21–III–1988, M. TAO leg.; allotype: ♀, same data as for the holotype. Paratypes: 1 ♂, 3 ♀♀, same data as for the holotype; 2 ♂♂, 1 ♀, Daimura-chô, Yokohama City, Kanagawa Pref., 15–VI–1985, M. TAO leg.; 5 ♂♂, 3 ♀♀, Maioka, Yokohama City, Kanagawa Pref., 12–VII–1986, M. TAO leg.; 2 ♀♀, Jike-chô, Yokohama City, Kanagawa Pref., 2–IV–1989, M. TAO leg.; 6 ♂♂, 3 ♀♀, Hayano, Kawasaki City, Kanagawa Pref., 15–V–1987, M. TAO leg.; 2 ♂♂, 3 ♀♀, Koajiro, Miura City, Kanagawa Pref., 2–VII–1988, M. TAO leg.; 1 ♂, 1 ♀, Ohtsuka, Hachiôji City, Tokyo, 26–IV–1983, S. KASAHARA leg.; 1 ♀, Zushi-chô, Machida City, Tokyo, 5–IV–1987, M. TAO leg.; 1 ♀, Honnô, Mobara City, Chiba Pref., 20–I–1980, M. TAO leg.; 1 ♂, 4 ♀♀, Migashima, Tokorozawa City, Saitama Pref., 3–V–1987, M. TAO leg.; 2 ♀♀, Daigo-machi, Ibaraki Pref., 29–V–1988, M. TAO leg.; 2 ♂♂, 1 ♀, Hatonomiya, Hanawa-chô, Fukushima Pref., 28–V–1988, M. TAO leg.; 1 ♂, Hiroyachi, Namie-chô, Fukushima Pref., 24–V–1986, S. KASAHARA leg.

The holo- and allotypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are separately preserved in the collections of the above museum, M. TAO and mine.

Notes. The present new species is easily discriminated from all the Japanese stenolophine species hitherto known by the features mentioned above. HABU (1973, p. 359, foot-note) noticed the existence of a small-sized *agonoides* (5.6 mm in length) among the specimens before him. It is possible that the specimen in question may belong to the present new species. JEDLIČKA (1964, pp. 3–4, fig. 3) described *S. korgei* from "Japan: Nara Park", which is according to his description, 6.5–7 mm in length. It was, however, synonymized with *agonoides* by HABU (1973, *loc. cit.*).

Mr. M. TAO has informed me that the present new species is often found with *agonoides* in wet places of grassland, and that when the density of the two species is relatively high, they are segregated from each other in their micro-habitats, wetter places being occupied by the present species.

要　　約

笠原須磨生: 本州中部から記載されるマメゴモクムシ属（オサムシ科）の1新種. —— 本州中部の主として関東地方から，マメゴモクムシ属 *Stenolophus* の基亜属に含まれる1新種，タオマメゴモクムシ *S.* (*S.*) *taoi* sp. nov. を記載した. 本種は，ナガマメゴモクムシ *S.* (*S.*) *agonoides* BATES にやや似ていて，しばしば後者とともに得られるが，より小型で前胸背板の形が異なり，複眼もより扁平で，外形上の識別はむずかしくない. 雄交尾器の形態は明らかに相違し，陰茎の先端部開口に，*Astenolophus* 亜属の種にみられるような楕円板がある. また，側片が黒ずむ点も特徴的である.

田尾美野留氏の観察によると，本種とナガマメゴモクムシは湿性草地などでしばしば混生しているが，多数の個体が群集する場合は生息域が微妙にわかれ，本種のほうがより湿潤な個所にみられるという.

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Elytra, *Tokyo*, **17** (2): 157, November 15, 1989

岐阜県濁河温泉のナガゴミムシ類

笠原 須磨生

KASAHARA, S.: Some Pterostichine Carabids from Nigorigo Spa in Gifu Prefecture, Central Japan

本年 (1989) の夏，岐阜県小坂町の濁河温泉で採集したナガゴミムシ類を報告する．当地は，飛騨山脈南端の最高峯御岳の中腹 (標高 1,770 m) にあり，この附近から登山道七合目 (標高 1,900 m) にかけて，コメツガ，シラビソなどの針葉樹を主とする原生林がよく保存されている．現地の状況については，岐阜県博物館の長谷川道明氏にご教示いただいた．記して謝意を表したい．

Pterostichus karasawai TANAKA ミヤマクロナガゴミムシ

2♂♂，2♀♀，11–VII–1989 (以下同年)．

Pterostichus janoi JEDLIČKA ヤノナガゴミムシ

20♂♂，4♀♀，11–VII；23♂♂，8♀♀，12–VII．

Pterostichus cristatoides STRANEO シンシュウナガゴミムシ

15♂♂，8♀♀，11–VII；6♂♂，8♀♀，12–VII．濁河の個体は雄交尾器の右側片が基産地 (長野県上高地，徳本峠) のものより細く，先端部が内側へ彎曲し，白山の個体によく似ている．

Pterostichus uenoi STRANEO ウエノオオナガゴミムシ

4♂♂，2♀♀，11–VII；5♂♂，5♀♀，12–VII．

Pterostichus latistylis TANAKA タナカナガゴミムシ

2♂♂，3♀♀，11–VII．雄交尾器の右側片が細く，中部以西にみられる型である．

Pterostichus nakanei STRANEO ナカネナガゴミムシ

3♂♂，2♀♀，11–VII．基準型（長野県上高地－徳本）は上翅の短かいものが多い（上翅長/上翅幅 1.47 前後)．濁河産のそれは，木曽山地のものと同様に，やや大型で，上翅もより長い（上翅長/上翅幅 1.6 前後)．

Elytra, Tokyo, **17** (2): 158, November 15, 1989

静岡県大井川上流二軒小屋のナガゴミムシ類

笠原 須磨生

KASAHARA, S.: Some Pterostichine Carabids from Nikengoya on the Akaishi Mountains in Shizuoka, Central Japan

1988 年の夏，静岡県大井川上流の静岡市田代二軒小屋（標高 1,400 m）に数日間滞在した．その折に採集したナガゴミムシ類を報告する．当地は，かつて天牛類の豊産地として著名であったが，25 年ぶりに再訪してみると，開発による変貌がいちじるしく，天牛はまったくの不作であった．しかし，山容が雄大急峻で，渓谷が深いことに変りはなく，ゴミムシ類の採集にあたっては好適地を見つけるのに多少苦労した．滞在中はおおむね雨天であったが，山小屋のストーブに薪をくべ，楽しい日々を過ごした．お世話になった石川　均，多比良嘉晃の両氏に，謝意を添えてこの小篇を呈したい．

Pterostichus karasawai TANAKA ミヤマクロナガゴミムシ

2 ♀♀, 26～27-VII, 筆者採集；1 ♀, 27～28-VII, 多比良嘉晃採集.

Pterostichus spiculifer ishidai TANAKA ハラトゲナガゴミムシ赤石亜種

1 ♂, 25-VII; 1 ♂, 25～26-VII, 筆者採集.

Pterostichus latistylis TANAKA タナカナガゴミムシ

10 ♂♂, 4 ♀♀, 24-VII; 3 ♂♂, 25-VII; 2 ♂♂, 1 ♀, 25～26-VII, 筆者採集.

二軒小屋の各個体は，上翅の第 3 間室に 6～7，第 5 間室にも 3～5 個の強い凹みをもつ孔点があり，本種としては例外的に特異な外観をもつ個体群である．陰茎は基準型のものよりも細いが，右側片は幅広く，先端部が切断状で，基産地のものに似ている．

Pterostichus brunneipennis akaishicus TANAKA ハネアカナガゴミムシ赤石亜種

3 ♂♂, 2 ♀♀, 24-VII; 1 ♂, 6 ♀♀, 25～26-VII; 3 ♀♀, 26～27-VII, 筆者採集.

すべて上翅が黒色の本亜種の基準型．高標高地の個体より大型である．

Pterostichus asymmetricus BATES ミズギワナガゴミムシ

1 ♀, 24-VII, 筆者採集；5 ♂♂, 13 ♀♀, 24～25-VII, 石川　均採集；18 ♂♂, 24 ♀♀, 25～26-VII; 14 ♂♂, 15 ♀♀, 26～27-VII, 筆者採集；8 ♂♂, 2 ♀♀, 27～28-VII, 多比良嘉晃採集.

前胸と上翅が幅広く，強壮で，肢が暗赤褐色の，赤石山脈に特有の型である．眼の後方はふくらみ，雄の腹部末端腹節の突起は左(内側)先端角が強く突きだす．

Pterostichus masumotoi TANAKA, MORITA et SUGA マスモトナガゴミムシ

5 ♂♂, 11 ♀♀, 24～25-VII, 石川　均採集；3 ♂♂, 13 ♀♀, 25～26-VII; 5 ♂♂, 17 ♀♀, 26～27-VII, 筆者採集；1 ♂, 2 ♀♀, 27～28-VII, 多比良嘉晃採集.

富士山を基産地とする大型種で，上翅は雌雄ともに光沢を欠く．赤石山地にも広く分布し，山梨県青木鉱泉，長野県三伏峠，静岡県安倍峠から記録されている．二軒小屋の個体は，基産地のものに比べると上翅がやや短かい．

Elytra, *Tokyo*, 17 (2): 159–167, November 15, 1989

Studies on the Subfamily Steninae (Coleoptera, Oxyporidae) from Japan

XIII. Subgenus *Hypostenus* of the Genus *Stenus* LATREILLE, Part 5[1]

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Abstract The *bosatsu*, *daimio* and *amida* groups of the subgenus *Hypostenus* of *Stenus* are dealt with. Five new species, *Stenus bosatsu*, *S. daimio*, *S. imasakai*, *S. amida* and *S. akome* are described and their male genitalia are figured.

6. Group of *S. bosatsu*

This group is composed of two species, *Stenus bosatsu* sp. nov. and *S. akojagai* HROMÁDKA and is distributed in Honshu (Chûbu and Chûgoku Districts).

The diagnosis of the *bosatsu* group is as follows: 1) head dark brown to black, 2) 6th and 7th sterna each evenly convex transversely in male, and 3) male genitalia with bulbous basal part of median lobe clearly separable from its slender apical part by a distinct constriction; parameres each with sparse or 4 short setae on apico-internal part.

Stenus bosatsu sp. nov.

(Fig. 1 A)

Male and female. Body length: 3.1–3.4 mm.

Body usually black and moderately shiny, pronotum and abdomen sometimes dark brown; labrum dark red; antennae reddish brown to dark brown; maxillary palpi and legs yellowish red to red.

Head broader than elytra (1.14 : 1), 1.63 times as broad as long, frontoclypeal area sparsely punctate, with microsculpture, interocular area shallowly concave, with a pair of depressions, the depressions longitudinal and broad, median part between the depressions moderately convex; punctures moderate in density, round and almost regular, interstices between punctures with distinct microsculpture. Antennae reaching posterior 5/6 of pronotum, 8th segment a little broader than 7th,

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2) Present address: Natural History Museum and Institute, Chiba, 955–2 Aoba-chô, Chiba, 280 Japan.

9th to 10th each elongate oval, 11th pointed, with relative lengths of segments from base to apex as 10 : 10 : 19 : 11 : 10 : 8 : 7 : 4 : 6 : 7 : 10.

Pronotum a little longer than elytra (1.05 : 1), about as long as broad, broadest near the middle, weakly constricted at base, side margins much rounded in anterior 3/4; disk slightly uneven, with a median longitudinal depression, the depression about half times as long as pronotum and distinct, its bottom covered only with microsculpture near center; punctures very dense and subrugose.

Elytra broader than long (1.25 : 1), moderately constricted at base, side margins gently rounded, hind margins together forming a shallow and V-shaped emargination; disk almost even, with punctures large, elongate oval, very dense and rough. Hind wings reduced, 0.45 times as long as elytra.

Legs moderate in length, hind tarsi 0.60 times as long as hind tibiae.

Abdomen subparallel-sided; punctures fine to moderate in size and round, interstices between punctures narrower than or as long as diameters of punctures on 3rd tergum, punctures becoming gradually smaller posteriorly from 3rd to 8th terga.

Male. Eighth sternum with a moderate emargination at posterior margin; 9th sternum arcuately emarginate at posterior margin, apicolateral projections slender, acutely pointed. Genitalia (Fig. 1A) with median lobe much bulbous in basal part, distinctly constricted at apical 1/4, then narrowed to pointed apex, internal armatures very slender; parameres extending beyond apex of median lobe, thick, gently curved outside behind apical 1/3, each paramere with 4 short hairs on apico-internal part.

Female. Body broader than in male; 8th sternum entire.

Holotype, male (Type No. 2685, Kyushu Univ.), Kaminikkawa Pass, Mt. Daibosatsu, Yamanashi Pref., 15∼18–VII–1982, S. NAOMI leg. Paratypes, 15 exs., same data as holotype; 9 exs., Sasagamine, Mt. Myôkô, Niigata Pref., 14∼15–VI–1980, S. NAOMI leg.

Distribution. Japan (Honshu: Chûbu District).

Remarks. This new species is allied to *S. akojagai* HROMÁDKA, but the head is entirely black and the 8th sternum is more shallowly emarginate at the posterior margin. The median lobe of the male genitalia is similar to that of the latter in outline, but the apical part is not so narrow as in *S. akojagai.* The parameres further extend beyond the apex of the median lobe than in *S. akojagai* and are gently curved outside behind the apical 1/3.

Stenus akojagai HROMÁDKA

Stenus akojagai HROMÁDKA, 1982, Fragm. Coleopt., (33/34): 132.

Specimens examined. 2 females, Mt. Daisen, Tottori Pref., 3∼5–VI–1980, S. NAOMI leg.

Distribution. Japan (Honshu: Chûgoku District).

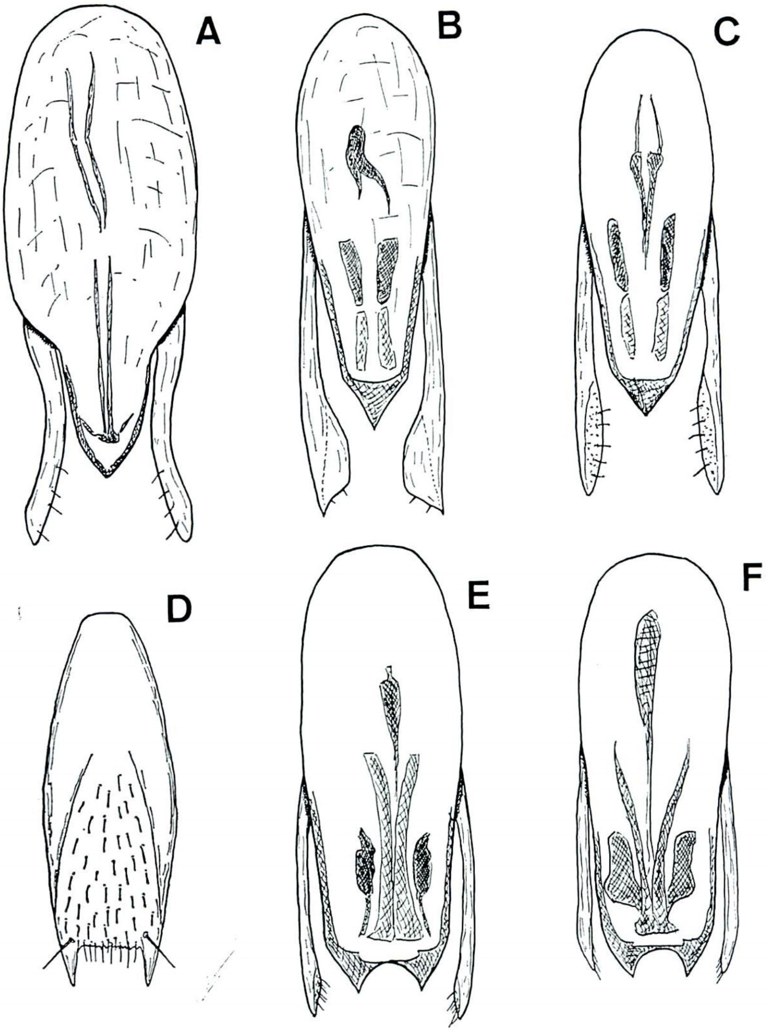

Fig. 1. A, *Stenus bosatsu* sp. nov.; B, *S. amida* sp. nov.; C, *S. akome* sp. nov.; D–E, *S. daimio* sp. nov.; F, *S. imasakai* sp. nov. A–C, E–F, Male genitalia in dorsal view; D, 9th sternum in male.

7. Group of *S. daimio*

This group is composed of two new species, *Stenus daimio* and *S. imasakai*, and is distributed in northern Kyushu so far as known.

The diagnosis of the *daimio* group is as follows: 1) head entirely black, 2) 3rd to 7th sterna each with a flat area or a depression or only 7th sternum with a flat area at posterior part in male, and 3) median lobe of male genitalia elongate oval, with a large and arcuate emargination at the middle of apical margin; parameres straight, slender and sparsely haired on apico-internal parts.

Stenus daimio sp. nov.

(Fig. 1 D–E)

Male and female. Body length: 3.5–3.8 mm.

Body entirely black and moderately shiny; labrum blackish with anterior margin reddish; antennae with 1st to 2nd segments yellowish red, 3rd to 11th yellowish brown to dark brown.

Head broader than elytra (1.13 : 1), 1.62 times as broad as long, frontoclypeal area sparsely punctate, interocular area with a pair of depressions, the depressions longitudinal, shallow and subparallel, median part between the depressions broad and gently convex; punctures small and sparse, interstices between punctures almost smooth, a little longer than diameters of punctures on the median part; punctures moderate in size, interstices between punctures indistinctly sculptured, narrower than diameters of punctures near inner margins of eyes. Antennae very slender, reaching posterior margin of pronotum, 2nd segment elongate oval, much broader than 3rd, 3rd to 7th very thin, 8th a little broader than 7th, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 11 : 10 : 20 : 11 : 11 : 9 : 8 : 6 : 8 : 8 : 10.

Pronotum robust, about as long as elytra, as long as broad, broadest near the middle and moderately constricted at base, side margins rounded in anterior 2/3, gently arcuate in posterior 1/3; disk slightly uneven, with a median longitudinal depression, the depression about 2/3 times as long as pronotum, distinct and deepest near center, then becoming gradually shallower both anteriorly and posteriorly, its bottom covered only with minute sculpture near center; punctures very dense, subrugose and rather rough.

Elytra broader than long (1.15 : 1), weakly constricted at base, side margins rounded, hind margins together forming a very shallow and arcuate emargination; disk strongly uneven, with sutural area distinctly higher in level than central part of elytron; punctures very dense, round and larger than those on pronotum. Hind wings reduced, 0.43 times as long as elytra.

Legs elongate, hind tarsi 0.63 times as long as hind tibiae.

Abdomen robust and broad; punctures round to elongate oval, interstices between punctures minutely sculptured, narrower than to about as long as diameters of punctures on 3rd tergum, punctures becoming gradually smaller and sparser posteriorly from 3rd to 8th terga.

Male. Third to 4th sterna each flat at posteromedian part; 5th sternum shallowly depressed and almost smooth at posteromedian part, the depression becoming gradually broader toward posterior margin which is very weakly emarginate, sides of the depression weakly ridged; 6th sternum with a deep and broad depression at posteromedian part, the depression covered with minute punctures and yellowish hairs on the surface, becoming deeper toward posterior margin which is arcuately emarginate, sides of the depression distinctly ridged; 7th sternum depressed at anteromedian part, the depression becoming deeper toward anterior margin, and also similarly modified at posteromedian part as in 6th sternum, but the depression is broader and the ridges deeper; 8th sternum with a small V-shaped emargination at the middle of posterior margin; 9th sternum (Fig. 1 D) straight and minutely serrate between apicolateral projections which are acutely pointed. Genitalia (Fig. 1 E) with median lobe elongate oval, with a large and arcuate emargination at the middle of apical margin, sides of the emargination bi-pointed; parameres slender, extending beyond apex of median lobe, with sparse hairs on apico-internal parts.

Female. Seventh sternum flat at posteromedian part; 8th sternum obtusely pointed at the middle of posterior margin.

Holotype, male (Type No. 2686, Kyushu Univ.), Nagasaki City, Nagasaki Pref., 6–XI–1977, H. OHISHI leg. Paratypes, 6 exs., same data as holotype.

Distribution. Japan (Kyushu).

Remarks. This new species is allied to *S. imasakai* sp. nov., but the body is broader, the eyes are more convex and the antennae reach the posterior margin of the pronotum. The abdomen is modified with depressions and ridges on the 3rd to 7th sterna in male and the parameres of the male genitalia extend beyond the apex of the median lobe.

Stenus imasakai sp. nov.

(Fig. 1 F)

Male and female. Body length: 3.1–3.4 mm.

Body black and moderately shiny; labrum red to dark red; antennae, maxillary palpi and legs yellow to yellowish brown.

Head broader than elytra (1.20: 1), 1.71 times as broad as long, frontoclypeal area sparsely punctate and pubescent, interocular area with a pair of depressions, the depressions longitudinal, shallow and gently convergent anteriorly, median part between the depressions triangular and gently convex; punctures very small and sparse in the middle, moderate in size and round near inner margins of eyes, interstices between punctures almost smooth. Antennae reaching posterior 5/6 of pronotum, 2nd segment distinctly broader than 3rd, 3rd to 8th subequal in breadth to one another, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 11 : 10 : 19 : 13 : 10 : 9 : 9 : 6 : 7 : 8 : 10.

Pronotum as long as elytra, about as long as broad, broadest near the middle, subparallel-sided in anterior half, gently narrowed posteriorly in posterior half; disk almost even, with a median longitudinal depression, the depression about 2/3 times as long as pronotum and indistinct; punctures very dense and irregular, interstices between punctures smooth.

Elytra broader than long (1.14 : 1), weakly constricted at base, side margins much rounded, hind margins together forming a very shallow emargination; disk almost smooth, with punctures round, very dense and rough. Hind wings reduced, 0.51 times as long as elytra.

Legs elongate, hind tarsi 0.65 times as long as hind tibiae.

Abdomen slender, weakly narrowed posteriorly; punctures round, moderate in size and almost regular, interstices between punctures a little narrower than diameters of punctures on 3rd tergum, punctures becoming gradually smaller posteriorly from 3rd to 8th terga.

Male. Seventh sternum flat at posteromedian part; 8th sternum flat at posterior part, with a shallow emargination at posterior margin; 9th sternum acutely emarginate at posterior margin, apicolateral projections pointed. Genitalia (Fig. 1 F) with median lobe very similar in outline to those of *S. daimio* sp. nov.; parameres slender, extending to a little before apex of median lobe.

Female. Eighth sternum entire.

Holotype, male (Type No. 2687, Kyushu Univ.), Nishisonoki, Nagasaki Pref., 23–IV–1978, S. IMASAKA leg. Paratypes, 7 exs., same data as holotype.

Distribution. Japan (Kyushu).

Remarks. This new species is closely allied to *S. daimio* sp. nov., but the labrum is paler in color, the eyes are less strongly convex, and the pronotum is subparallel-sided in anterior half. Each of the 7th and 8th sterna is flat in the posteromedian part in male and the parameres of the male genitalia extend to a little before the apex of the median lobe.

This new species is named in honor of an amateur entomologist, Mr. S. IMASAKA (Shimabara City), in appreciation of his kind donation of the interesting stenine specimens.

8. Group of *S. amida*

This group is composed of two new species, *Stenus amida* and *S. akome*, and is distributed in northern Kyushu and Shikoku.

The diagnosis of the *amida* group is as follows: 1) head dark brown to black, sometimes with clypeofrontal area and anterior part of interocular area reddish brown to dark reddish black, 2) 6th sternum flat at posteromedian part and 7th sternum with a depression at least at posteromedian part in male, and 3) median lobe of male genitalia bulbous at base and pointed at apex; parameres far beyond apex of median lobe, more or less broad at apical parts.

Stenus amida sp. nov.

(Fig. 1 B)

Male and female. Body length: 2.9–3.2 mm.

Head dark reddish brown, interocular area black along inner margins of eyes; pronotum and elytra red to reddish brown; abdomen reddish brown to dark brown, weakly shiny; labrum reddish; antennae with 1st to 7th segments yellowish brown, 8th to 11th dark brown; maxillary palpi and legs reddish brown to brown.

Head broader than elytra (1.25: 1), 1.67 times as broad as long, frontoclypeal area sparsely punctate, sometimes with a definite median keel, interocular area with a pair of depressions, the depressions shallow, convergent anteriorly, median part between the depressions triangular and weakly convex; punctures moderate in density, round and almost regular, interstices between punctures distinctly sculptured. Antennae reaching posterior 3/4 of pronotum, 3rd to 8th segments subequal in length to one another, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 9 : 9 : 17 : 10 : 10 : 6 : 6 : 5 : 6 : 7 : 10.

Pronotum about as long as elytra, a little narrower than long (0.95 : 1), broadest at anterior 2/5 and moderately constricted at base, side margins much rounded; disk slightly uneven, with a median longitudinal depression, the depression about 3/4 times as long as pronotum; punctures dense, rough and irregular, interstices between punctures indistinctly sculptured.

Elytra broader than long (1.05 : 1), moderately constricted at base, side margins weakly rounded, hind margins together forming a wide and very shallow emargination; disk uneven, with punctures very dense, rough, irregular and a little larger than those on pronotum. Hind wings completely atrophied.

Legs moderate in length, femora thick, tibiae slightly broadened apically, hind tarsi 0.71 times as long as hind tibiae.

Abdomen cylindrical and stout; 3rd to 6th terga each broadly depressed at basal part; punctures very dense, distinct, round to elliptical, and a little larger at base than near posterior margin on 3rd tergum, punctures becoming gradually smaller from 3rd to 8th terga; pubescence red to reddish brown, regular and decumbent.

Male. Sixth sternum flat at posteromedian part; 7th sternum depressed along the midline, the depression narrow, becoming deeper toward posterior margin which is almost straight or very weakly emarginate, sides of the depression moderately ridged; 8th sternum with a small V-shaped emargination at posteromedian part; 9th sternum with an arcuate emargination at posterior margin, apicolateral projections acutely pointed. Genitalia (Fig. 1 B) bulbous at base, gradually narrowed apically, acutely pointed at apex, with obtuse apicolateral angles; parameres extending far beyond apex of median lobe, broad at apical parts, the broadened part shallowly concave on ventral side and pointed at outer posterior corner, with two small setae on its apical margin.

Female. Eighth sternum entire at posterior margin.

Holotype, male (Type No. 2688, Kyushu Univ.), Mt. Tsurugi, Tokushima Pref., 15～17–X–1980, S. NAOMI leg. Paratypes, 18 exs., same data as holotype; 4 exs., same locality, 19～20–VI–1981, S. NAOMI leg.

Distribution. Japan (Shikoku).

Remarks. This new species is allied to *S. akome* sp. nov., but the depression on the 7th sternum is narrower and longer in male, and the parameres of the male genitalia are broader at the apical parts and acutely pointed at the outer posterior corners.

Stenus akome sp. nov.

(Fig. 1 C)

Male and female. Body length: 3.2–3.7 mm.

Head black, sometimes with clypeofrontal area and anterior part of interocular area reddish brown to dark reddish brown; labrum reddish; pronotum and elytra reddish brown to brown; abdomen red to dark red; antennae, maxillary palpi and legs yellowish red to reddish brown.

Head broader than elytra (1.18 : 1), 1.68 times as broad as long, frontoclypeal area with sparse and minute punctures; interocular area with a pair of depressions, the depressions longitudinal and shallow, median part between the depressions triangular and moderately convex; punctures round, a little smaller and sparser on the middle than near inner margins of eyes, interstices between punctures minutely sculptured. Antennae slender, reaching posterior 4/5 of pronotum, 3rd to 8th segments thin, 9th distinctly broader than 8th, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 10 : 9 : 20 : 11 : 11 : 8 : 7 : 5 : 6 : 7 : 10.

Pronotum about as long as elytra, as long as broad, broadest at anterior 2/5 and weakly constricted at base, side margins rounded; disk slightly uneven, with a median longitudinal depression, the depression shallow, about 3/4 times as long as pronotum; punctures very dense, large and round, interstices between punctures very narrow, indistinctly sculptured or almost smooth.

Elytra broader than long (1.19: 1), weakly constricted at base, side margins gently rounded, hind margins together forming a wide and V-shaped emargination; disk almost even, with punctures very dense, round and a little larger than those on pronotum. Hind wings reduced, 0.54 times as long as elytra.

Legs elongate, femora thick, hind tarsi 0.74 times as long as hind tibiae.

Abdomen cylindrical, with punctures round, a little smaller and sparser than those in *S. amida* sp. nov. on 3rd tergum, punctures very fine and sparse on 8th tergum; pubescence sparse and decumbent.

Male. Sixth sternum flat at posteromedian part, with an arcuate shallow emargination at posterior margin; 7th sternum with a depression at posteromedian part, the depressed part semicircular in shape, gradually deeper toward posterior margin which is arcuately emarginate; 8th sternum with a shallow and wide emargination at posterior margin; 9th sternum with an arcuate emargination at posterior margin, apicolateral projections strongly pointed. Genitalia (Fig. 1 C) with median lobe similar in shape to that of *S. amida* sp. nov., but a little broader in apical half; parameres extending far beyond apex of median lobe, almost straight, each with 5 to

7 short setae on apico-internal part which is weakly swollen.

Female. Eighth sternum minutely pointed at the middle of posterior margin.

Holotype, female (Type No. 2689, Kyushu Univ.), Mt. Hiko, Fukuoka Pref., 4–IX–1977, H. OHISHI leg. Paratypes, 8 exs., same data as holotype; 1 ex., Makinoto Pass, Ôita Pref., 10–VIII–1979, S. NAOMI leg.; 2 exs., Shin-yabakei, Ôita Pref., 30–III–1985, S. NOMURA leg.; 1 ex., Kikuchi Valley, Kumamoto Pref., 11–IV–1981, S. NAOMI leg.; 1 ex., Mt. Hakuchô, Kumamoto Pref., 27–V–1978, T. OGATA leg.

Distribution. Japan (Kyushu).

Remarks. This new species is allied to *S. amida* sp. nov., but the depressed area on the posteromedian part of the 7th sternum is broader and semicircular in male, and the parameres of the male genitalia are narrower in apical parts.

Acknowledgements

I wish to express my sincere gratitude to Prof. Y. HIRASHIMA and Assoc. Prof. K. MORIMOTO of the Entomological Laboratory, Kyushu University, for their constant guidance. I am also indebted to Mr. S. IMASAKA (Shimabara City), H. OHISHI (Kyoto) and S. NOMURA (Kyushu University) for their kind offer of valuable stenine specimens used in this paper.

要約

直海俊一郎：日本産メダカハネカクシ亜科の研究. XIII. メダカハネカクシ属 *Hypostenus* 亜属, 5.—— 本論文で *S. rufescens* 複合群のうちの *bosatsu* 種群, *daimio* 種群, および *amida* 種群を論じた.

bosatsu 種群は *Stenus bosatsu* sp. nov. および *S. akoyagai* HROMÁDKA の2種から成り, 本州(中部地方, 中国地方) に分布する. 本種群は, 雄交尾器中央片において, 球状の基部と細長い先端部の境界に明瞭なくびれがあり, 側片は比較的短かいか, 長い場合は外側へ湾曲するという形質などで特徴づけられる.

daimio 種群は *Stenus daimio* および *S. imasakai* の2新種から成り, 九州北部に分布している. 本種群は, 雄交尾器中央片の先端部中央に大型の湾状の切れ込みがあり, 側片は短かく直線状であるという形質などで特徴づけられる.

amida 種群は *Stenus amida* および *S. akome* の2新種から成り, 四国と九州に分布している. 本種群は, 雄交尾器中央片の先端部が尖がり, 側片は長くその先端部が多少とも広がるか脹れるという形質などで特徴づけられる.

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Elytra, Tokyo, **17** (2): 168, November 15, 1989

A New Record of *Agabus* Species (Coleoptera, Dytiscidae) from Hokkaido, Japan

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and

Terutsune ABE

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During his dytiscid researches made in Hokkaido in 1988, one of the authors, ABE, fortunately captured an interesting species of the genus *Agabus*. After a careful study, we have concluded that it is *A. erichsoni*. This is the first record of the Holarctic species in the Japanese fauna.

Agabus erichsoni GEMMINGER et HAROLD

Agabus erichsoni GEMMINGER et HAROLD, 1868, Cat. Coleopt., **2**: 454.
Agabus nigroaeneus ERICHSON, 1837, Käf. Mk. Brandbg., **1**: 175.

Body black with weak coppery sheen above. Dorsal surface distinctly shagreened.

Length: 10.8–11.3 mm.

Specimens examined. 5 ♂♂, 3 ♀♀, Iwaobetsu, Shari, Abashiri, Hokkaido, 29–VIII–1988, Y. & T. ABE leg.; 11 ♂♂, 9 ♀♀, same locality, 30–VII–1989, H. MATSUMOTO leg.

Distribution. Holarctic Region.

Although NAKANE (1989) illustrated the body and the male genitalia of a dytiscid from Hokkaido under the name "*Ilybius* n. sp. ?", it seems to belong to this species, since *A. erichsoni* looks like an *Ilybius* species.

We are very grateful to Dr. A. N. NILSSON for his kindness in many ways.

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Elytra, Tokyo, 17 (2): 169–174, November 15, 1989

Two Taiwanese Staphylinid Beetles Related to *Quedius abnormalis* (Coleoptera, Staphylinidae)[1]

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Abstract Two Taiwanese species belonging to the group of *Quedius* (*Microsaurus*) *abnormalis* are dealt with. One of them, collected on Mt. Neng-kao-pei-feng (2,870 m alt.), proves new to science and is described under the name of *Q.* (*M.*) *masuzoi*. The other, from San-liu-chiu on Mt. Hsüeh Shan in northern Taiwan, is not properly described as it is known only from a female specimen.

The group of *Quedius* (*Microsaurus*) *abnormalis* is an assemblage of depigmented staphylinid beetles with reduced eyes. Its members have hitherto been recorded from the three southern main islands of Japan, and are either endogean at high altitudes or cavernicolous at lower elevations. They are not abundant at every known locality, sometimes known from only one or two specimens.

Early in the summer of 1961, Dr. Shun-Ichi UÉNO obtained a staphylinid apparently belonging to this species-group at a height of Mt. Hsüeh Shan in northern Taiwan, and submitted it to the present author for taxonomic study. Only a glance was needed for recognition of its systematic affinity, but the single specimen known was unfortunately a female and not useful for determining its true relationship. Thus, the specimen remains unnamed up to the present.

Leading an expedition party sent by the National Science Museum, Tokyo, Dr. UÉNO visited high mountains of Taiwan again early in the summer of 1989, and though he failed in re-obtaining the staphylinid on Mt. Hsüeh Shan, he took a specimen of a closely related species on Mt. Neng-kao-pei-feng in the central part of the island. It was a male, and a careful study of its genitalia proved that it was specifically different from any of the known Japanese members of the species-group.

The main purpose of this paper is to introduce this new species into science, because it is not only interesting from the taxonomic view-point but seems to afford an indisputable evidence of a close faunal relationship between the high mountains of Taiwan and the Japanese Islands. Adding to its description, the species from Mt. Hsüeh Shan will be recorded without proper scientific name.

The author wishes herewith to express his hearty thanks to Dr. Shun-Ichi UÉNO, National Science Museum (Nat. Hist.), Tokyo, for his kindness in giving the author

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[1] This study is supported in part by the Grant-in-aid No. 01041099 for Field Research of the Monbusho International Scientific Research Program, Japan.

the opportunity of studying on the interesting staphylinids and much valuable advice on the present study. Thanks are also due to Professor Masataka SATÔ and Dr. Mamoru OWADA, who participated in the expedition and collaborated with Dr. UÉNO in searching for high altitude insects in Taiwan.

***Quedius* (*Microsaurus*) *masuzoi* Y. WATANABE, sp. nov.**

(Figs. 1–4)

Body length: 9.4 mm (from front margin of head to anal end).

Body elongate, parallel-sided and subdepressed above. Colour light reddish yellow and shining, with antennae and legs somewhat darkened, abdomen feebly iridescent.

Head suborbicular, depressed above, slightly transverse (width/length=1.05), with the margins of postocular areas arcuate and gradually narrowed posteriad; surface smooth, covered with microscopic coriaceous ground sculpture; temporal area provided extensively with numerous setiferous punctures, the bristles being blackish and decumbent forwards; eyes very small and flat, the longitudinal diameter of each eye only one-sixth as long as the postocular area. Cephalic chaetotaxy as follows: one front seta situated at each side of front margin, one post-antennal seta just behind postero-external corner of each antennal tubercle; one long supraorbital seta inside each eye, four or so internal temporal setae ranged in a longitudinal series inside each temporal bristled part, two temporal setae in each temporal bristled part, and three infraorbital setae ranged in a longitudinal series inside infraorbital crest. Antennae relatively short, not extending to the posterior margin of pronotum; three proximal segments polished, each dilated towards the apex; the remainings opaque, 1st segment robust and more than twice as long as broad, 2nd a little longer than broad (length/width=1.33), though much shorter than 1st (2nd/1st=0.40), 3rd elongate, obviously longer than broad (length/width=2.17) and more than 1.5 times as long as 2nd, 4th to 10th almost equal in length to one another, 4th slightly and each of 8th to 10th distinctly transverse, apicalmost a little longer than broad (length/width=1.38) and more than 1.5 times as long as 10th, subacuminate towards the tip.

Pronotum subquadrate and convex medially, slightly transverse (width/length=1.06) and distinctly broader than head (pronotum/head=1.17), widest near the middle and contracted both anteriad and posteriad; lateral parts deflexed in front though more or less deplanate behind the widest part, lateral margins finely bordered, gently arcuate in anterior two-thirds and nearly straight in posterior third, anterior margin gently arcuate and not bordered at the middle, posterior margin rounded and bordered throughout like lateral margins; anterior angles rectangular but blunt at the corners, posterior ones widely rounded and almost effaced; surface smooth though covered with extremely fine coriaceous ground sculpture as on head, provided with a longitudinal series of three small setiferous punctures in anterior half on each side of the median line, of which the anteriormost is situated just behind anterior margin, each

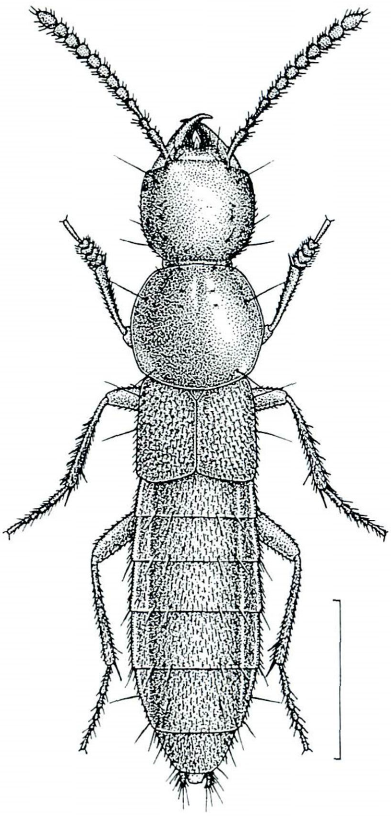
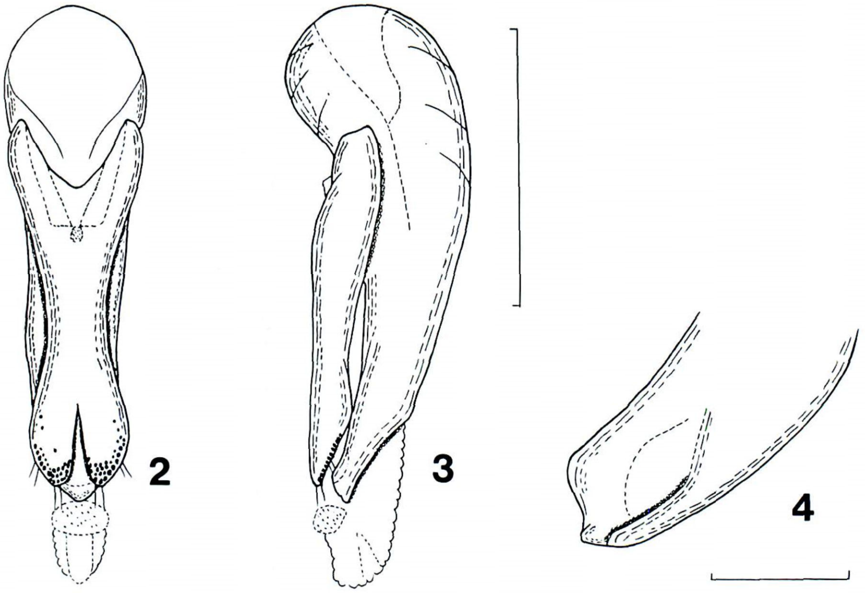


Fig. 1. *Quedius* (*Microsaurus*) *masuzoi* Y. WATANABE, sp. nov., ♂, from Mt. Neng-kao-pei-feng, Nan-t'ou Hsien, Taiwan. Scale: 3.0 mm.

lateral marginal part sparsely provided with small setiferous punctures, bearing two long outstanding blackish setae, one at anterior third and the other on each side before posterior margin. Scutellum subtriangular, sparingly with somewhat coarse setiferous punctures on the surface. Elytra square and flat, somewhat transverse (width/length=1.13) and a little narrower than pronotum (elytra/pronotum=0.92); lateral sides almost straight, each provided with two outstanding, conspicuously long blackish setae, one at anterior fourth and the other behind the middle, posterior margin gently emarginate; surface densely, coarsely and shallowly punctured, and densely covered with brownish pubescence.

Abdomen elongate and nearly parallel-sided; basal four visible tergites each shallowly and transversely depressed above in anterior part, and fringed with four long dark brownish setae along posterior margin, though they are sometimes missing; surface of each tergite finely, moderately closely punctured and finely pubescent; last sternite in male shallowly and semicircularly emarginate at the middle of posterior margin, and flattened and glabrous in front of the emargination. Legs relatively long; protarsi widely dilated.



Figs. 2–4. Male genital organ of *Quedius* (*Microsaurus*) *masuzoi* Y. WATANABE, sp. nov.; ventral view (2), lateral view (3), and oblique ventral view of the apical part of median lobe (4). Scale: 1.0 mm (for Figs. 2–3), 0.25 mm (for Fig. 4).

Male genital organ sclerotized and trilobed, with basal piece large and globular; median lobe elongate, nearly parallel-sided but abruptly narrowed in apical part towards the tip, which is bluntly pointed as seen from the ventral side; viewed oblique ventrally, apical part of ventral surface subrhomboidally foveolate and shortly carinate at the middle. Style symmetrical, slightly shorter than median lobe, constricted at the middle and narrower than median lobe at that part, but somewhat dilated before the apex and almost as broad as median lobe at that part; apex deeply and narrowly cleft at the middle, forming two lobes close to each other, each lobe fringed with four setae, two apical and two lateral; internal face scattered with numerous sensorial tubercles, which are distributed on latero-apical part of each lobe.

Female unknown.

Holotype: ♂, Mt. Neng-kao-pei-feng, 2,870 m alt., Nan-t'ou Hsien, Taiwan, 21–VI–1989, S.-I. UÉNO leg. Preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Distribution. Taiwan.

Notes. The present new species can be easily distinguished from the other members of the group of *Q*. (*M*.) *abnormalis* by the following combination of morphological characters: antennae relatively short, with 8th to 10th segments each distinctly transverse; male genital organ with median lobe subrhomboidally foveolate at the apical part of ventral surface, style deeply cleft at the middle of apex and forming two lobes, each of which is provided with sensorial tubercles on the latero-apical part of ventral surface.

It is worth noting that *Q. masuzoi* is not directly related to the forms occurring in the Island of Kyushu, which is geographically the nearest to Taiwan, but resembles those of central Honshu.

According to Dr. UÉNO, the type specimen was dug out from a loose scree covered with mosses and small plants at the head of a gully on the western slope of Mt. Neng-kao-pei-feng, a peak on the Chung-yang Mountain Range in central Taiwan. The collecting site was near the timber-limit, though still shaded by tall coniferous trees. It can be regarded as an endogean species, not an upper hypogean one, since it was found from near the surface of the scree, beneath a large stone.

This interesting species is named to the memory of the late Professor Masuzo UÉNO, father of Dr. Shun-Ichi UÉNO and a leading entomologist in Japan, who passed away on June 17, 1989, while his son was investigating the high altitude fauna of Taiwan.

Quedius **(*Microsaurus*)** sp.

Body length: 13.0 mm (from front margin of head to anal end).

Only one female specimen collected at a height (now called San-liu-chiu) of Mt. Hsüeh Shan seems to belong to the group of *Q.* (*M.*) *abnormalis* and to be related to the preceding new species. It is similar to the latter in facies and coloration, though obviously larger. Members of this species-group are usually very similar to one another in general appearance, and can be identified with confidence only on their male genitalia. The author therefore prefers to withhold its final determination until male specimens are available for study.

Specimen examined. 1 ♀, San-liu-chiu on Mt. Hsüeh Shan, 3,500 m alt., T'ai-chung Hsien, Taiwan, 22–VI–1961, S.-I. UÉNO leg.

要　約

渡辺泰明: 台湾で得られたツヤムネハネカクシ種群に属する2種. —— 上野俊一博士（国立科学博物館）のご厚意により，同博士が台湾の高山帯で採集されたツヤムネハネカクシ種群に属する種を検討することができた. その結果，それらを下記のとおり記載および記録した.

1. *Quedius* (*Microsaurus*) *masuzoi* Y. WATANABE, sp. nov. マスゾウツヤムネハネカクシ

正基準標本: 1♂，台湾南投県能高北峯，21–VI–1989，上野俊一採集.

この種は触角 8–10 の各節の幅が明らかに長さより広いこと，雄交尾器の中葉腹面の末端域が菱形にえぐられること，癒合した側片の末端域は中央の深い切れ込みによって二片状を呈し，腹面の感覚粒が各片の末端側域に分布していることなどの特徴によって，既知の種から容易に区別することができ，新種と判断された. なお，種名は正基準標本の採集者のご尊父であり，陸水生物学の泰斗として知られる故上野益三博士に献名したものである.

2. *Quedius* (*Microsaurus*) sp.

検視標本：1♀，台湾台中県雪山三六九，22–VI–1961，上野俊一採集.

本種は明らかにツヤムネハネカクシ種群に属するが，採集個体が雌1個体のみのため，命名は雄個体が採集されるまで保留した.

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Elytra, Tokyo, **17** (2): 175–180, November 15, 1989

Coprophagous Scarabaeids Related to *Onthophagus orientalis* (Coleoptera, Scarabaeidae) from Southeast Asia

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Abstract A new Thai coprophagous beetle related to *Onthophagus* (s. str.) *orientalis* Harold is described: *O.* (s. str.) *maniti* sp. nov. *O. orientalis javaecola* Balthasar is raised to the species rank. A key to four relatives of *O. orientalis* is also given.

In my collection of coprophagous beetles from Northwest Thailand, I have found a large number of specimens of *Onthophagus* (s. str.) *orientalis* Harold, widely distributed in Southeast Asia though originally described from Hong Kong and Bengal. I have also noticed the existence of two smaller species related to it, and have studied their taxonomic position. The result is that one is *O.* (s. str.) *brutus* Arrow, originally described from Bengal and Burma, and the other is new to science. The former is known from Thailand for the first time and the latter will be described here. Besides, *O.* (s. str.) *orientalis javaecola* Balthasar, originally described from "West-Java" and also recorded from Sumatra and Borneo, will be raised to the rank of species.

I express my hearty thanks to Mr. Les Jessop for his kind arrangement of a loan of materials preserved in the British Museum (Natural History), London, and to Mr. Teruo Ochi for his contribution of specimens and invaluable advice. Special thanks are due to Mr. Kaoru Sakai for taking photographs inserted in this paper.

The holotype of the new species to be described herein will be deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Onthophagus (s. str.) ***maniti*** sp. nov.

(Figs. 1, 5, 9, 13)

Blackish brown, with head and pronotum darker, elytra and pygidium yellowish brown, abdomen dark yellowish brown, 6 apical segments of antennae and hairs on surfaces pale yellowish brown; fore body above with dark coppery lustre, elytra moderately shining, ventral surface rather strongly so; pronotum and elytra densely clothed with fairly long hairs. Oblong oval, rather strongly convex above though gently flattened posteriorly, moderately constricted between bases of pronotum and elytra.

Male. Head slightly wider than long, with outer margin feebly angulate at each side of apex, borders between clypeus and genae, and also each side of gena; clypeus finely rugoso-punctate at the anterior part, sparsely scattered with strong punctures in middle; fronto-clypeal border gently ridged; genae rather closely punctate; frons gently inclined forwards, scattered with a few punctures; hind margin of head with parallel, erect, slender horns, united at the base by a lamina, which is distinctly upright in the middle, forming a horn, oblong in frontal view, strongly arcuate forwards in dorsal view.

Pronotum closely, fairly strongly punctate, feebly asperate anteriorly; base dilated triangular, bordered by punctate-groove; front angles narrowly rounded; sides gently, roundly produced; disc strongly convex, a little hollowed behind each cephalic horn, with a medial groove in posterior 2/3.

Elytra finely striate; intervals weakly convex, fairly closely punctate and feebly depressed along striae, sparsely scattered with punctures medially.

Pygidium closely, finely punctate, noticeably clothed with long hairs.

Metasternum rather strongly but not closely punctate, with a median impression.

Female. Body less convex above; clypeus rugoso-punctate, scattered with strong punctures posteriorly; fronto-clypeal border ridged, the ridge feebly arcuate forwards; frons almost impunctate; genae rather closely scattered with strong punctures laterally; vertex with a transverse carina, which is feebly arcuate backwards and prominent at the middle. Pronotum with a transverse ridge apically, which is nearly straight though interrupted medially.

Body length: 8–9 mm.

Holotype. ♂. Fang, Chiang Mai Prov., Northwest Thailand, 25–XI–1988, K. MASUMOTO leg. (in NSMT). Paratypes. 1 ex., Doi Pui, Chiang Mai Prov., 10–V–1985, N. KOYAMA leg.; 1 ex., Phrao Distr., Chiang Mai Prov., 10–VIII–1987, Manit Y. leg.; 1 ex., Phrao – Chiang Dao, Chiang Mai Prov., 14/16–IX–1988, K. MASUMOTO leg.; 5 exs., Doi Pui, 17–VIII–1989, Manit Y. leg.

Onthophagus (s. str.) ***javaecola*** BALTHASAR, 1960, stat. nov.

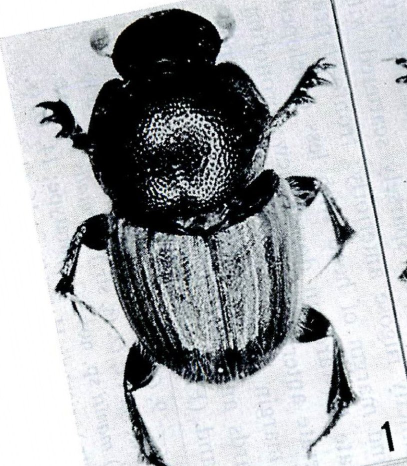
(Figs. 2, 6, 10, 14)

Onthophagus (s. str.) *orientalis javaecola* BALTHASAR, 1960, Ent. Blätt., **55**, p. 194.

Distribution. Java, Sumatra, Borneo.

Specimens examined. 6 exs.

Figs. 1–8. —— 1, *Onthophagus* (s. str.) *maniti* sp. nov., ♂, holotype; 2, *O.* (s. str.) *javaecola* BALTHASAR, stat. nov., ♂; 3, *O.* (s. str.) *orientalis* HAROLD, ♂; 4, *O.* (s. str.) *brutus* ARROW, ♂; 5, *O.* (s. str.) *maniti* sp. nov., ♀, paratype; 6, *O.* (s. str.) *javaecola* BALTHASAR, stat. nov., ♀; 7, *O.* (s. str.) *orientalis* HAROLD, ♀; 8, *O.* (s. str.) *brutus* ARROW, ♀.



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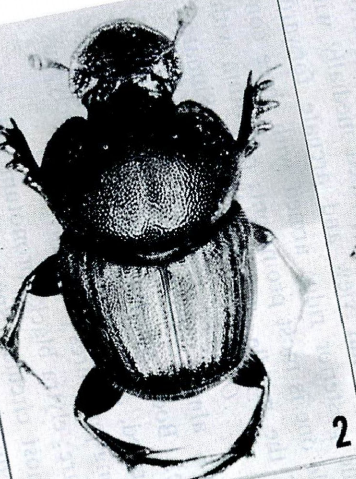

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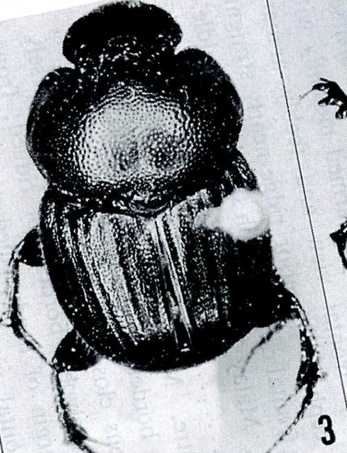

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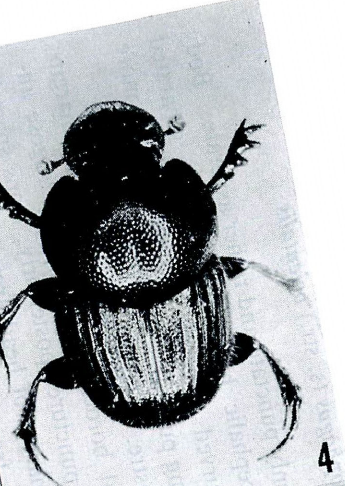

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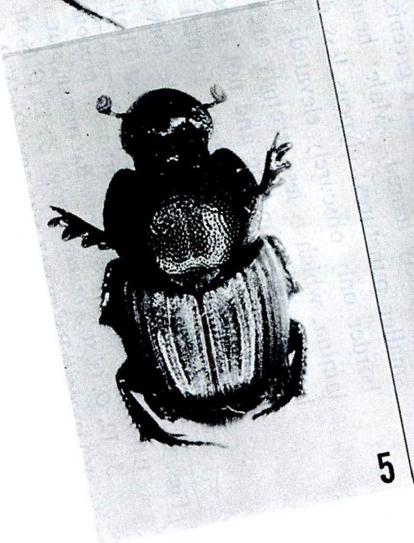

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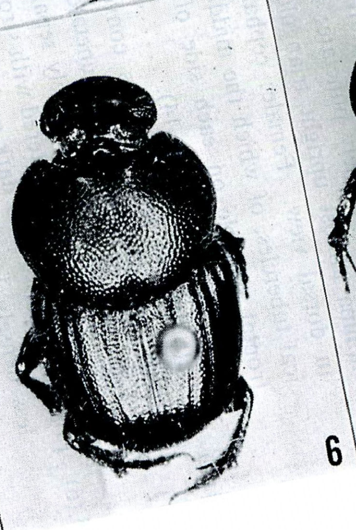

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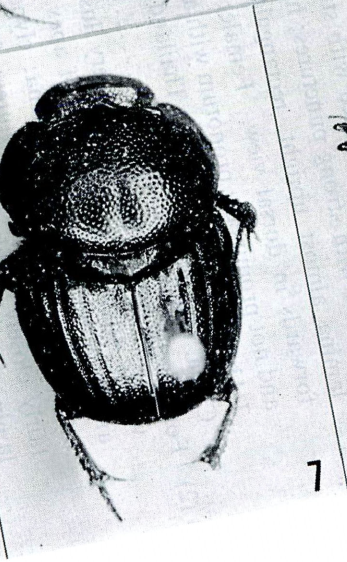

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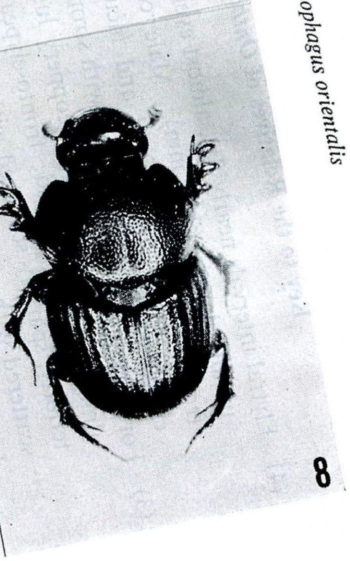


8

Key to the Relatives of *Onthophagus* (s. str.) *orientalis*

1 (4) Elytral intervals nearly flat, almost evenly punctate and rather asperate. Body usually larger (7–11 mm). Male cephalic horns more widely separated from each other, inclined and incurved apically. Female clypeus more closely rugose, not scattered with strong punctures posteriorly.

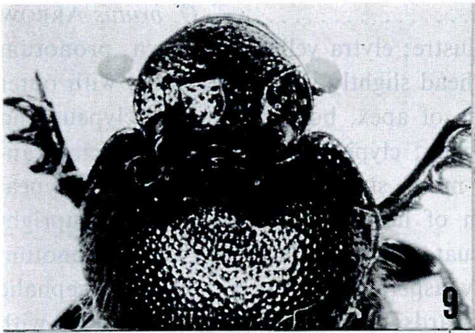
2 (3) Fore body above with dark coppery lustre. Male: head with outer margin almost evenly rounded; fronto-clypeal border ridged; clypeus rugose anteriorly, sparsely scattered with strong punctures posteriorly; frons sparsely scattered with strong punctures; hind margin of head armed medially with lamina almost upright, rectangular in frontal view and feebly arcuate forwards in dorsal view. Female: cephalic posterior ridge nearly straight and not prominent; pronotum with a frontal ridge on each side of the middle. 7–11 mm. India, Burma, Thailand, Malay Peninsula, Indochina, South China. (Figs. 3, 7, 11, 15). .... *O. orientalis* HAROLD

3 (2) Fore body above without coppery lustre. Male: head with outer margin weakly angulate at each side of apex, borders between clypeus and genae, and also on each side of gena; clypeus closely, finely punctate, sparsely intermixed with large punctures; fronto-clypeal border not ridged; frons fairly closely, finely punctate; hind margin of head armed medially with lamina almost upright triangular in frontal view and arcuate forwards in dorsal view. Female: cephalic posterior ridge armed with three conical tubercles, of which the middle one is most prominent; pronotum with frontal tubercle on each side of the middle. 8–10 mm. Java, Sumatra, Borneo. (Figs. 2, 6, 10, 14). .... *O. javaecola* BALTHASAR, stat. nov.

4 (1) Elytral intervals more or less convex, almost impunctate medially, sometimes sparsely, unevenly punctate. Body usually smaller (6.5–9 mm). Male cephalic horns less widely separated, almost upright. Female clypeus less closely rugose, scattered with strong punctures posteriorly.

5 (6) Fore body above with dark greenish lustre; elytra black; pronotum and elytra less densely haired. Male: head almost circular, sparsely scattered with smaller punctures; clypeus less distinctly rugose anteriorly; fronto-clypeal border only obscurely elevated; hind margin of head with less developed lamina, which is less strongly arcuate forwards in dorsal view; pronotum less strongly punctate and not asperate anteriorly. Female: cephalic posterior ridge nearly straight; frontal margin of pronotum with a transverse ridge, which is feebly arcuate forwards and interrupted medially. 6.5–8.5 mm. India, Burma, Northwest Thailand. (Figs. 4, 8, 12, 16). ....

Figs. 9–16. Heads and anterior portions of pronota. —— 9, *O.* (s. str.) *maniti* sp. nov., ♂, holotype; 10, *O.* (s. str.) *javaecola* BALTHASAR, stat. nov., ♂; 11, *O.* (s. str.) *orientalis* HAROLD, ♂; 12, *O.* (s. str.) *brutus* ARROW, ♂; 13, *O.* (s. str.) *maniti* sp. nov., ♀, paratype; 14, *O.* (s. str.) *javaecola* BALTHASAR, stat. nov., ♀; 15, *O.* (s. str.) *orientalis* HAROLD, ♀; 16, *O.* (s. str.) *brutus* ARROW, ♀.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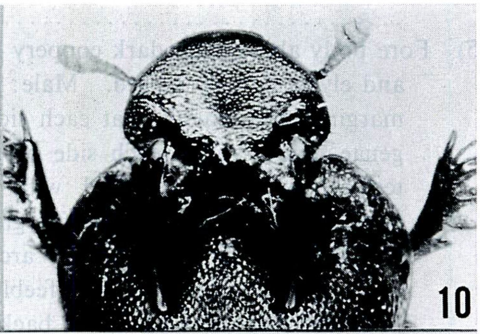
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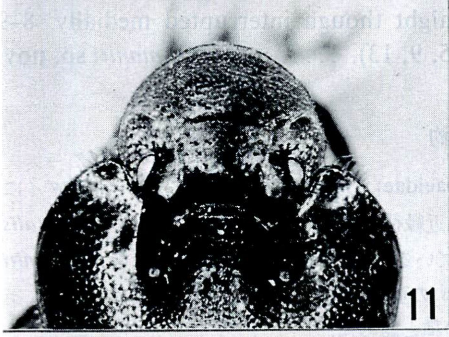
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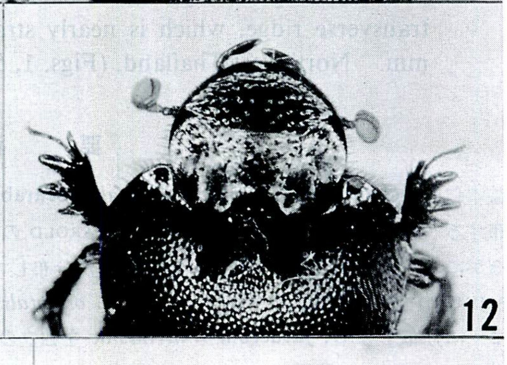
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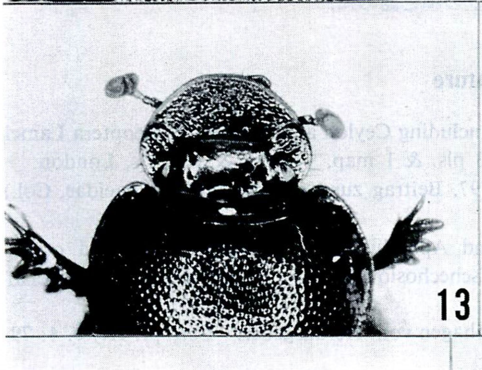
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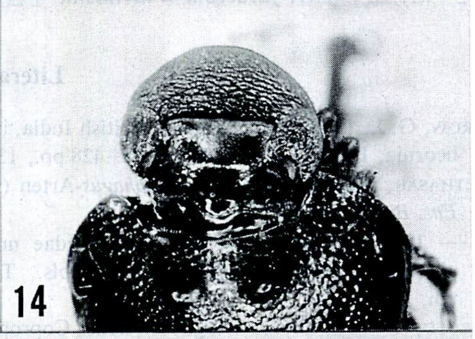
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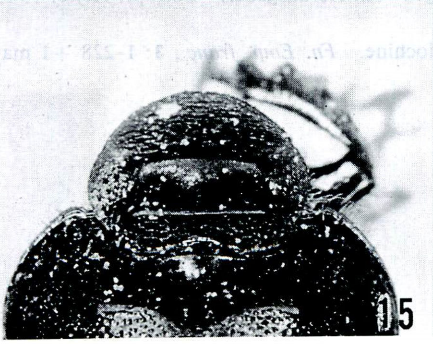
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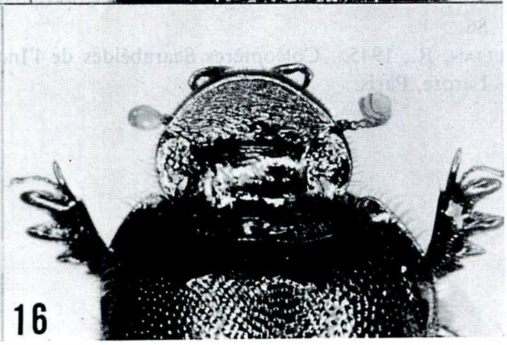
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.... *O. brutus* ARROW

6 (5) Fore body above with dark coppery lustre; elytra yellowish brown; pronotum and elytra densely haired. Male: head slightly wider than long, with outer margin feebly angulate at each side of apex, borders between clypeus and genae, and also on each side of gena; clypeus finely rugoso-punctate anteriorly, sparsely scattered with more strong punctures; fronto-clypeal border gently ridged; hind margin of head with more developed upright lamina, which is more strongly arcuate forwards in dorsal view; pronotum more strongly punctate and feebly asperate anteriorly. Female: cephalic posterior ridge feebly arcuate backwards; frontal margin of pronotum with transverse ridge, which is nearly straight though interrupted medially. 8–9 mm. Northwest Thailand. (Figs. 1, 5, 9, 13). .... *O. maniti* sp. nov.

要　約

益本仁雄: *Onthophagus* (s. str.) *orientalis* (Scarabaeidae) の近縁種について. —— 北西タイに分布する *Onthophagus* (s. str.) *orientalis* HAROLD の近縁種を検討した. 本地域には, *O. orientalis* のほかに, *O. brutus* ARROW および1新種が分布していることがわかったので, 後者を *O. maniti* MASUMOTO と命名記載した. なお, 従来 *O. orientalis* の亜種とされていて, ジャワ, スマトラ, ボルネオに分布する *O. javaecola* BALTHASAR を独立の種と認めた.

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Elytra, Tokyo, 17 (2): 181–186, November 15, 1989

Notes on *Podabrus* (Coleoptera, Cantharidae) from the Zaou Mountains, Miyagi Prefecture, Japan

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Abstract Taxonomic accounts are given of 3 species of *Podabrus* from the Zaou Mountains, northeastern Honshu, Japan. Two of them are described as new species under the names *P. tokui* and *P. tomokoae.*

Cantharid species belonging to the genus *Podabrus* are very difficult to classify because of their close similarity in external morphology. To make the matter worse, two or three closely resembling species appear not only in the same habitat but also in the same season at a locality. Some of them seem widely distributed, but there are others that are locally isolated. For this reason, their classification is much confused in our present knowledge.

On the Zaou Mountains in Miyagi Prefecture, northeastern Honshu, three species of the genus have hitherto been collected. This small paper is devoted to the analysis of their taxonomic status, and is dedicated to the late Mr. Toku Watanabe, who greatly contributed to clarification of the local insect fauna and also extended kind support to us in various ways.

I am very grateful to Dr. Shun-Ichi Uéno for his kindness in reading the original manuscript of this paper.

Podabrus tokugoanus Nakane et Makino, 1989

(Figs. 1–2, 7–8, 13–14)

Podabrus tokugoanus Nakane et Makino, 1989, Rev. Miyazaki Sangyo-Keiei Univ., 1(2): 9.

This species was recently described by Nakane and Makino (1989) based on the specimens taken at the Tokugô-tôge, Nagano Prefecture, and its vicinities. It was also recorded in the same paper from Oku-Nikkô, Tochigi Prefecture, and Oze, Fukushima Prefecture, based on female specimens. Its northernmost locality is marked at the Zaou Mountains, as will be recorded below. The species seems widely distributed over a rather high mountainous area from the central to the northeastern parts of Honshu.

The male genitalia are illustrated herein based on a Zaou specimen, since the text-figure inserted in its original description is not very accurate.

Specimens examined. 50 exs., Zaou Mts., Miyagi Pref., 27–VII–1979, M. Satô leg.; 1 ex., Hyoutan-numa, Zaou Mts., Miyagi Pref., 30–VI–1979, T. WATANABE leg.; 15 exs., same locality, 26~28–VII–1979, T. WATANABE leg.

Podabrus tokui M. SATÔ, sp. nov.

(Figs. 5–6, 9–10, 15–16)

Male. Body largely yellow, but antennae and tarsi are partly infuscate. Head behind eyes brownish black, though the dark colour is interrupted at the middle. A pair of longitudinal maculae on pronotum, scutellum, base of prosternum, metasternum, metepisterna and abdomen brownish black, though the lateral and posterior margins, and the 7th and 8th abdominal segments are yellowish.

Head scattered with fine punctures in front, and somewhat closely punctate behind eyes, but rugosely so on neck. Pronotum slightly broader than long, almost impunctate, but sparsely and shallowly punctate in the areas of markings; anterior angles rounded; posterior angles slightly prominent. Elytra somewhat closely punctate, the punctures fine in basal area and becoming more rugose posteriorly. Front and middle claws cleft, hind one dilated at the base.

Male genitalia elongate in outline; ventral lobe broad and provided with many pubescence; dorsal plate strongly notched, with some pubescence at the tip and with straight projection.

Length: 7.2–8.1 mm; breadth: 1.6–1.8 mm.

Female. Similar to the male, but the genae, prosternum, and the 7th abdominal sternite are brownish black. All claws dilated at the base.

Length: 7.5–8.6 mm; breadth: 1.7–2.1 mm.

Holotype: ♂, Zaou Mts., Miyagi Pref., 27–VII–1979, M. SATÔ leg. Allotype: ♀, same data as for the holotype. Paratypes: 30 exs., same data as for the holotype; 13 exs., Hyoutan-numa, Zaou Mts., Miyagi Pref., 30–VI and 1–VII–1979, T. WATANABE leg.

This new species is distinguished from *Podabrus temporalis* HAROLD, 1878, by the different shape of pronotum, the characteristic structure of male genitalia and the fine punctation of head and pronotum.

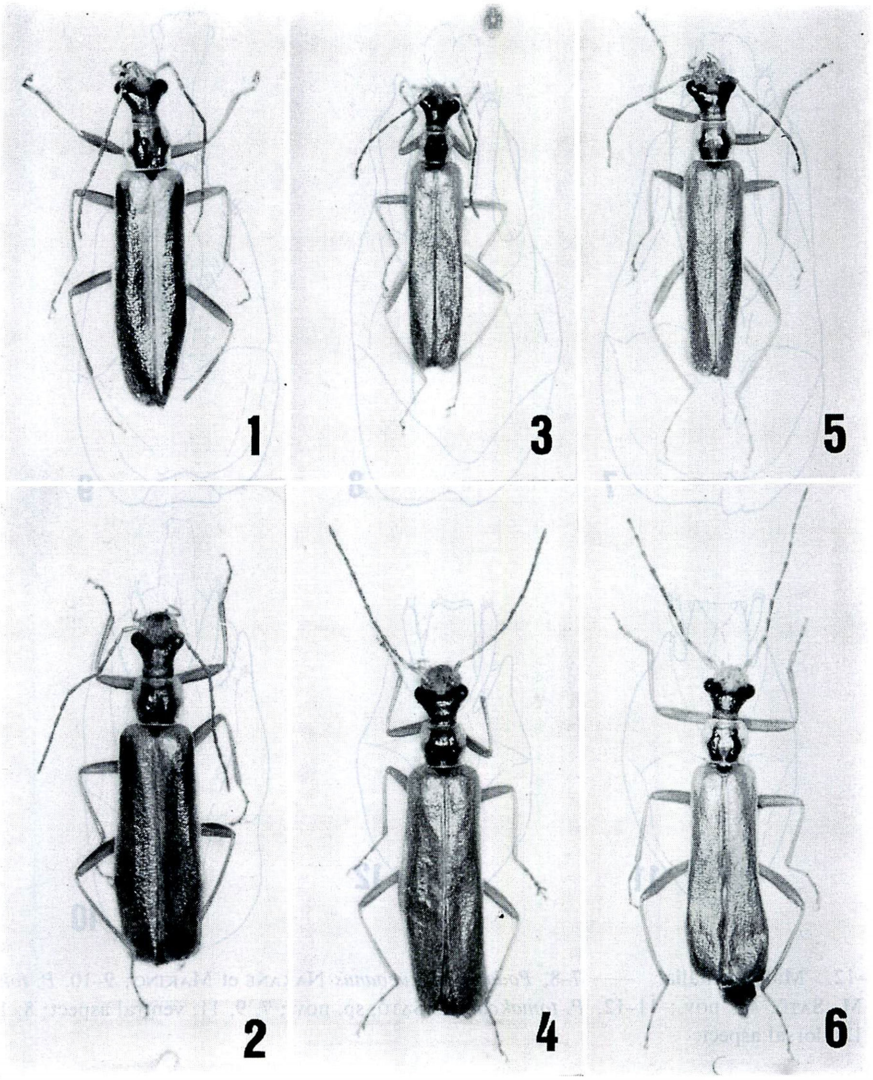
This species is named in honour of the late Mr. Toku WATANABE, who was well known for his contribution to the faunal study in Miyagi Prefecture.

Podabrus tomokoae M. SATÔ, sp. nov.

(Figs. 3–4, 11–12, 17–18)

Male. Body largely pale yellow, but the antennae and elytra are partly infuscate. Head behind eyes widely, pronotal large central macula, scutellum, metasternum, metepisterna and abdomen brownish black, though the lateral and posterior margins, and the 7th and 8th abdominal segments are yellowish.

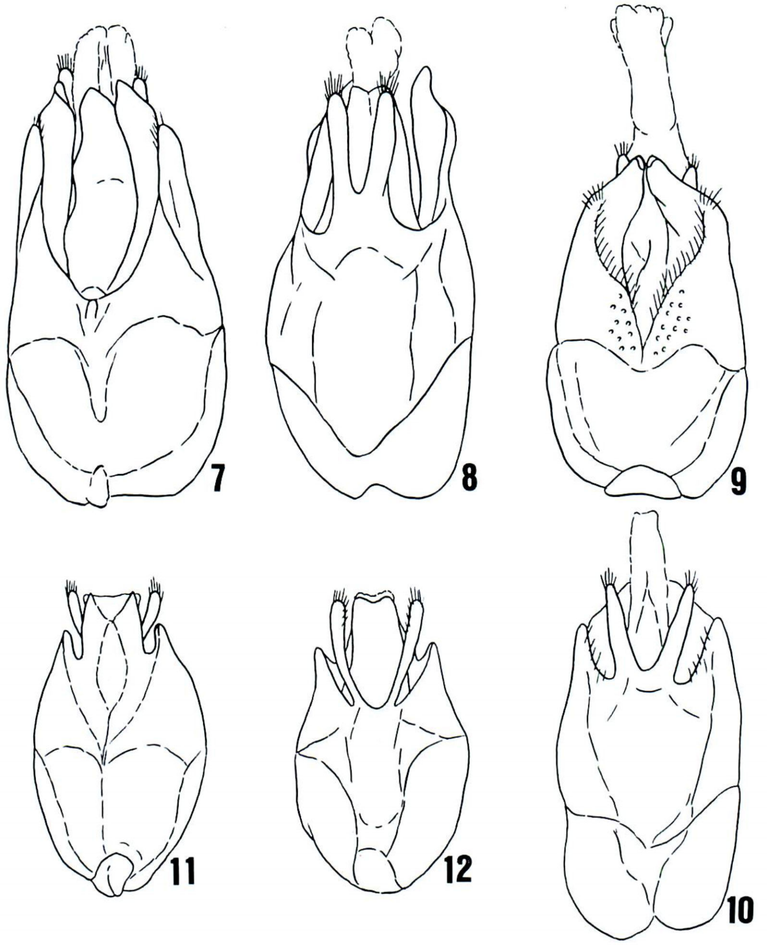
Head impunctate in front, sparsely punctate behind eyes, and closely and rugosely



Figs. 1–6. Habitus. —— 1–2, *Podabrus tokugoanus* NAKANE et MAKINO; 3–4, *P. tomokoae* M. SATÔ, sp. nov.; 5–6, *P. tokui* M. SATÔ, sp. nov.; 1, 3, 5, male; 2, 4, 6, female.

so on neck; integument rather smooth. Pronotum slightly longer than width, almost impunctate, though punctate in the lateral areas of blackish markings, the punctures being sparse, somewhat large and shallow; anterior angles more or less truncate, posterior angles slightly prominent. Elytra somewhat closely punctate and becoming more rugosely so posteriad, the punctures fine in basal area. Claws of front and middle legs cleft, hind one dilated at the base.

Male genitalia oval in outline; ventral lobe simple; median lobe rather broad;



Figs. 7–12. Male genitalia. —— 7–8, *Podabrus tokugoanus* NAKANE et MAKINO; 9–10, *P. tokui* M. SATÔ, sp. nov.; 11–12, *P. tomokoae* M. SATÔ, sp. nov.; 7, 9, 11, ventral aspect; 8, 10, 12, dorsal aspect.

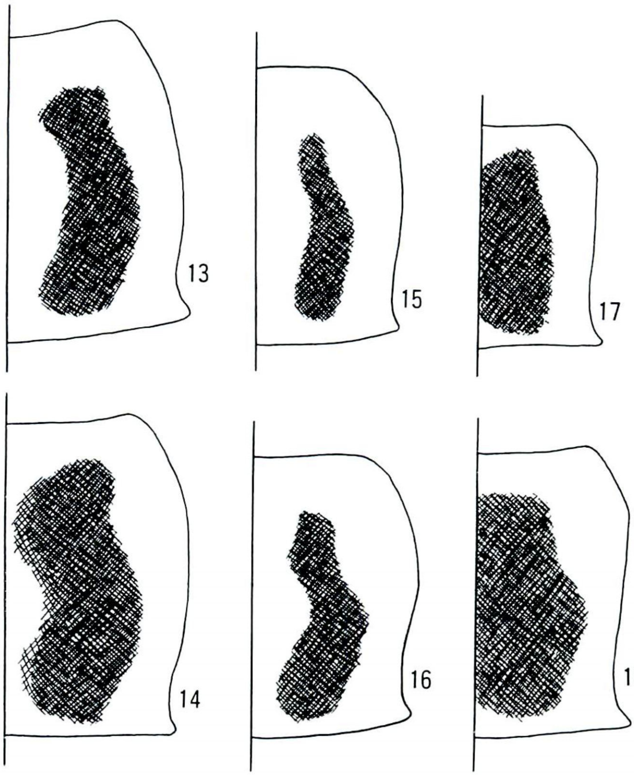
dorsal plate strongly notched, with some pubescence at the tip, and projections inwardly curved.

Length: 7.5–7.7 mm; breadth: 1.5–1.6 mm.

Female. Similar to the male, but the body is yellow with brownish tinge; gena, prosternum, and the 7th abdominal sternite brownish black. Pronotum slightly broader than long. All claws dilated at the base.

Length: 8.7–9.8 mm; breadth: 2.0–2.3 mm.

Holotype: ♂, Hyoutan-numa, Zaou Mts., Miyagi Pref., 30–VI–1979, T. WATANABE leg. Allotype: ♀, same data as for the holotype. Paratypes: 1 ♂, same data as for the holotype; 2 ♀♀, same locality and collector as for the holotype, 1–VII–1979.



Figs. 13–18. Right half of pronotum. —— 13–14, *Podabrus tokugoanus* NAKANE et MAKINO; 15–16, *P. tokui* M. SATÔ, sp. nov.; 17–18, *P. tomokoae* M. SATÔ, sp. nov.; 13, 15, 17, male; 14, 16, 18, female.

The present new species is closely allied to the preceding one, but differs from it in the different shape of pronotum and male genitalia.

The specific name is given after Mrs. Tomoko WATANABE, Toku's wife, who always supported her husband's work both in the field and in the laboratory.

The type specimens will be distributed to the following collections, except for the holotypes and allotypes which are preserved in the Biological Laboratory, Nagoya Women's University.

Natn. Sci. Mus. (Nat. Hist.), Tokyo; Ent. Lab., Ehime Univ.; Brit. Mus. (Nat. Hist.); Biol. Lab., Nagoya Wom. Univ.; Lab. of the late Mr. T. WATANABE and Dr. W. WITTMER.

要約

佐藤正孝：宮城県蔵王山のクビボソジョウカイ属に関する覚え書き．—— 東北地方の宮城県蔵王山

から，クビボソジョウカイ属に含まれる3種を報告した．これらは，主として故渡辺 徳氏の採集された標本に基づいたもので，そのうちの1種に故人の遺徳を偲んで献名した．クビボソジョウカイ属に含まれる種は，たがいによく似ているうえに，2～3種が同一地域でも同じ季節に出現し，広域分布種と地域的に分化した種とが混じっているので，分類が非常にむずかしく，現状にはまだかなりの混乱がある．

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Elytra, Tokyo, **17** (2): 186, November 15, 1989

New Record of *Acicnemis dorsonigrita* (Coleoptera, Curculionidae) from the Island of Okinawa

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Acicnemis dorsonigrita VOSS is one of the common weevils known to occur in the mainland of Japan (Hokkaido, Honshu, Shikoku and Kyushu) and the northern Izu Islands, and is also recorded from Continental China. Recently, I had an opportunity to examine a female specimen of this species collected from the northern part of Okinawa Island. This is the first record of the species from the Ryukyu Islands.

I wish to thank Mr. Minoru SAWAI for his kind supply of this specimen.

Acicnemis dorsonigrita VOSS

Acicnemis dorsonigrita VOSS, 1941, Mitt. münchn. ent. Ges., **31**, p. 889.

Specimen examined. 1 ♀, Haneji, Nago-shi, Okinawa Is., SW Japan, 22–III–1987, M. SAWAI leg. (H. HAYAKAWA collection).

Elytra, Tokyo, 17 (2): 187–191, November 15, 1989

Tenebrionidae of East Asia

(V) A New Genus Related to *Blaps* (Blaptini) and a New Species from Northwest Thailand

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Abstract A new tenebrionid genus related to *Blaps* is erected for a new Northwest Thai species, *Thaioblaps punneeae* gen. et sp. nov. (Coleoptera, Tenebrionidae, Blaptini).

During a field survey in Northwest Thailand, I obtained an unknown blaptine species by a liquid (mixture of vinegar and spirits) trap. Although resembling certain species of the genus *Blaps*, it has many remarkable characters. After a careful examination, I have concluded that this tenebrionid species is not only new to science but also belongs to a new genus. It will be described herein and a new genus will be erected at the same time.

Dr. Ottó MERKL, Természettudományi Múzeum, Budapest, gave me invaluable suggestion concerning the systematic position of the new genus. Mr. Manit YIMYAM, Toongnoi School, Chiang Mai Province, helped me to collect the type specimens. Dr. S.-I. UÉNO, National Science Museum (Nat. Hist.), Tokyo, has been continuously supporting me in my study. Mr. Kaoru SAKAI took a beautiful photograph inserted in this paper. I express my hearty thanks to the above persons for their kindness.

The holotype to be designated in this paper will be preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo, and some paratypes are also in the Természettudományi Múzeum, Budapest, the Muséum National d'Histoire Naturelle, Paris, and also the British Museum (Natural History), London.

Thaioblaps gen. nov.

Type species: *Thaioblaps punneeae* gen. et sp. nov.

Body fairly large (22.5–33.5 mm); mostly piceous; oblong oval, rather strongly convex above; apterous.

Male. Head mostly transverse elliptic, almost horizontal though feebly convex above, more or less punctate; clypeus transverse, shortly subparallel-sided anteriorly, truncate at apex; frons fairly broad; genae obtusely produced laterad; eyes medium-sized. Terminal segment of maxillary palpus rather large, dilated. Antennae rather slender, reaching basal portion of elytra.

Pronotum rather trapezoidal, though each side is arcuate; apical margin gently and widely emarginate, not bordered; base very feebly arcuate forwards, not bordered; sides more or less reflexed though not bordered; front angles obtuse; hind angles subrectangular; disc gently convex, more or less punctate, often vaguely impressed on each side, with a shallow longitudinal impression in the middle. Scutellum invisible.

Elytra longitudinally oblong-ovoid; dorsum strongly convex though gently flattened in middle; disc more or less micro-shagreened and shallowly punctato-striate; intervals with rows of granules, which become larger and somewhat carinulate postero-laterally; sides moderately arcuate, gradually declined to outer margins; lateral margins solidly enveloping hind body, thus invisible from above; epipleuron fairly broad basally, gradually narrowed towards apices, with inner margin rimmed; apices distinctly projected posteriad.

Prosternum medium-sized, mostly coriaceous, strongly raised between coxae and deeply grooved medially, apical margin widely and feebly arcuate, prosternal process strongly depressed; mesosternum short and coriaceous, rather triangularly inclined forwards; metasternum short, coriaceous.

Abdomen large, feebly coriaceous, two basal sternites gently depressed in middle, borders between 3rd and 4th sternites, and also 4th and 5th membranous; anal sternite rounded at apex.

Legs fairly long though rather thick; profemur with a tooth at an apical portion of upper edge of inner margin; protibia with two terminal spurs.

Genitalia elongate fusiform.

Female. Compared with male, body larger and more robust, apices of elytra less projected posteriad.

Distribution. Northwest Thailand.

Notes. This new genus somewhat resembles the genus *Blaps* broadly distributed in Palearctic and Ethiopian Regions, but can be easily distinguished from the latter by the body larger, the pronotum more strongly arcuate and reflexed laterally, the scutellum invisible, the elytra shallowly punctato-striate, the border between 1st and 2nd abdominal sternites without tuft, the borders between 3rd and 4th, and also 4th and 5th membranous, and the profemora toothed. Some genera from Central Asia, *e. g.*, *Coelocnemodes* BATES and *Dila* FISCHER, are armed with a tooth on each profemur, and also without abdominal tuft. From the former the new genus can be discriminated by the transverse, truncate clypeus, and rather slender antennae, and from the latter it can be discriminated by the pronotum not swollen on each side.

It is very interesting that such a peculiar genus as this new one is distributed in Northwest Thailand, near the northern periphery of the Oriental Region.

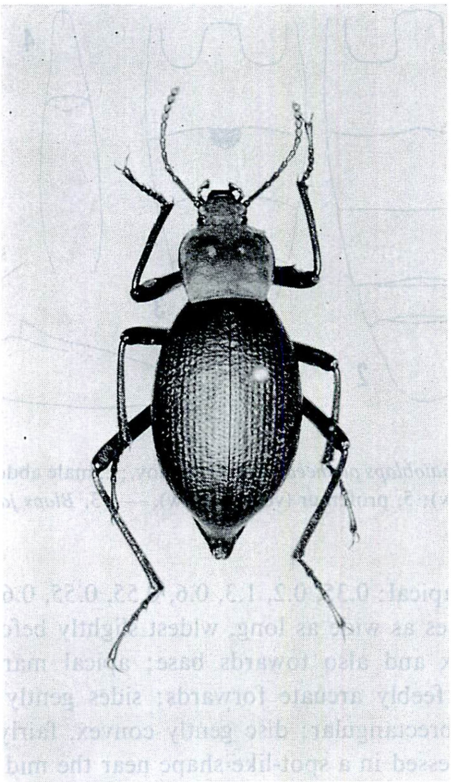


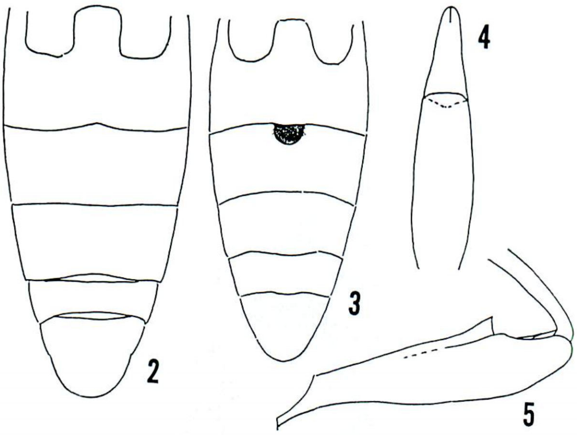
Fig. 1. *Thaioblaps punneeae* gen. et sp. nov., ♂, holotype.

Thaioblaps punneeae gen. et sp. nov.

(Figs. 1–2, 4–5)

Piceous, with mouth parts, apical portions of antennae, tarsi, etc., more or less lighter in colour; dorsal suface rather mat, ventral surface also mat except for abdomen, which is gently shiny. Oblong-oval, rather strongly convex above.

Male. Head rather transverse elliptic, almost flat, closely and shallowly punctate; clypeus transverse, shortly subparallel-sided anteriad, widely truncate at apex; fronto-clypeal border obscure; frons fairly broad, very feebly raised; genae obtusely produced laterad, depressed posteriorly; eyes medium-sized and slightly oblique, with outer margin rounded, distance between them a little less than 5 times their transverse diameter. Mentum rather transverse elliptic with base almost straight, coarsely rugoso-punctate though the punctures are shallow; gula parabolic, coriaceous and finely haired, shortly but deeply impressed apicad on each side; terminal segment of maxillary palpus moderately dilated. Antennae reaching basal 1/5 of elytra, gently thickened towards apex, with 4 apical segments densely covered with short hairs, 8th to 10th moniliform, 11th drop-shaped, ratio of the length of each



Figs. 2–5. —— 2, 4–5. *Thaioblaps punneeae* gen. et sp. nov.; 2, male abdominal segments; 4, male genitalia (dorsal view); 5, profemur (ventral view). —— 3. *Blaps japonensis* MARSEUL, male abdominal segments.

segment from basal to apical: 0.35, 0.2, 1.3, 0.6, 0.55, 0.55, 0.6, 0.4, 0.4, 0.4, 0.6.

Pronotum 1.25 times as wide as long, widest slightly before the middle, roundly narrowed towards apex and also towards base; apical margin gently and widely emarginate; base very feebly arcuate forwards; sides gently reflexed; front angles obtuse; hind angles subrectangular; disc gently convex, fairly closely and shallowly punctate, vaguely impressed in a spot-like shape near the middle and at basal 1/3 on each side, with a shallow longitudinal impression in the middle. Scutellum invisible.

Elytra about 1.7 times as long as wide, 3.4 times length and 1.6 times width of pronotum; dorsum strongly convex though gently flattened in middle; disc microshagreened and shallowly punctato-striate; intervals with rows of granules, which become larger and somewhat carinulate postero-laterally; sides widest nearly at basal 2/5, roundly narrowed forwards and backwards, gradually declined towards outer margins; lateral margins enveloping hind body so sufficiently that they are invisible from above; epipleuron fairly broad basally, gradually narrowed towards apex, with inner margin finely rimmed; apices distinctly projected posteriad.

Prosternum medium-sized, shallowly, transversely wrinkled apically, shallowly punctate and rather coriaceous in middle, strongly raised between coxae and deeply grooved medially, apical margin widely and feebly emarginate, prosternal process strongly depressed, transverse and only feebly produced posteriad; mesosternum short and coriaceous, shallowly wrinkled, inclined forwards; metasternum short, coriaceous and shallowly wrinkled.

Abdomen large, feebly coriaceous, two basal sternites gently depressed in middle, borders between 3rd and 4th sternites, and also 4th and 5th membranous; anal sternite rounded at apex.

Legs fairly long though rather thick; profemur with a tooth at apical 1/4 of the upper edge of inner margin; protibia with two terminal spurs; ratio of the length of pro-, meso- and metatarsomeres from basal to apical: 0.55, 0.4, 0.4, 0.4, 1.3; 0.65, 0.5, 0.5, 0.45, 1.35; 1.05, 0.75, 0.65, 1.55; claws falciform and sharp.

Genitalia elongate fusiform.

Female. As compared with male, body larger and more robust, apices of elytra less projected posteriad.

Body length: 22.5–33.5 mm.

Type series. Holotype: ♂, Angkhang, Fang, Chiang Mai Prov., Northwest Thailand, 4–XII–1988, Manit Y. leg. (in NSMT). Paratypes: 2 exs., same data as for the holotype; 1 ex., Angkhang, 25–XI–1988, K. MASUMOTO leg.; 4 exs., Angkhang, 18–XII–1988, Manit Y. leg.; 3 exs., Angkhang. I–1989, Manit Y. leg.; 10 exs., Angkhang, 26–V～1–VI–1989, Manit Y. leg.; 8 exs., Samoeng, Chiang Mai, 26–V–1989, K. MASUMOTO leg.

要　約

益本仁雄: 北西タイ産 *Blaps* 属 (Tenebrionidae, Blaptini) 近縁の1新属新種の記載. —— 北西タイで採集されたゴミムシダマシが, ヤマトオサムシダマシに近縁ではあるが, まったく新しい属の新種であることがわかったので, 新属 *Thaioblaps* を設立し, 新種を *T. punneeae* MASUMOTO と命名した.

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Elytra, Tokyo, **17** (2): 192, November 15, 1989

マユミニジキマワリの記録

益本仁雄

Kimio MASUMOTO: Record of *Cyriogeton mayumiae* MASUMOTO (Coleoptera, Tenebrionidae, Amarygmini)

マユミニジキマワリ *Cyriogeton mayumiae* MASUMOTO, 1981, は台湾中部の山地に分布するやや小型のキマワリ類で，頭胸背は青藍色，上翅は青緑色で，やや虹色をした赤紫色の大紋を有する美しい種である．Bonn の採集家 J. KLAPPERICH が，1977 年に阿里山で採集した個体を正基準標本として記載された．実はそれより 50 年前に，鹿野忠雄博士によって能高山，卑南主山，八通関などで採集されていたが，不明種のまま放置されていた．

今般，国立科学博物館，上野俊一博士らによる台湾の高山帯における動物調査の際，新たに2頭の本種が得られたので報告する．いずれも昼間に飛翔していたものだ，ということである．データは次のとおり．

1 ♂, Tz'u-kao-tung-feng, 3,150 m, Hsüeh-shan Mts., T'ai-chung Hsien, 30–VI–1989, Shun-Ichi UÉNO leg.

1 ♀, Tz'u-kao-tung-feng, 3,150 m, 30–VI–1989, Mamoru OWADA leg.

本種は，標高 1,800–3,200 m に生息し，ほかのキマワリ類とちがって複眼が大きくなく，昼間に樹上で活動しているグループである．近縁種は北ベトナムに2種（いずれも未記載種）あって，台湾の山地性の甲虫と北ベトナムに分布するものとの関連を証明するもののひとつである．

なお，本種の属については，*Cyriogeton* から *Plesiophthalmus* に移すべきであると考えている．

Elytra, Tokyo, 17 (2): 193–199, November 15, 1989

A New *Pidonia* (Coleoptera, Cerambycidae) from the Hokuriku District, Central Japan

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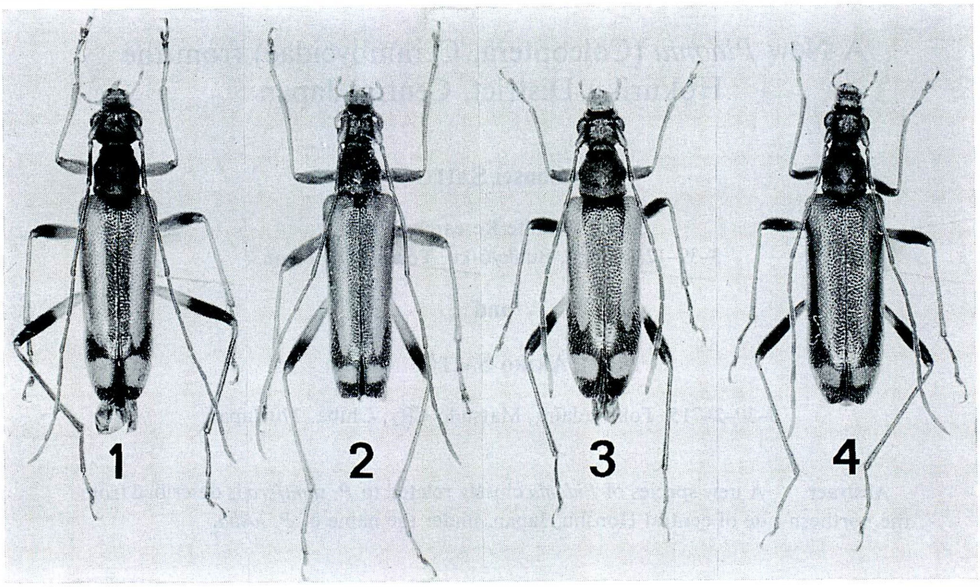
Abstract A new species of *Pidonia* closely related to *P. signifera* is described from the northern side of central Honshu, Japan, under the name of *P. jasha*.

Pidonia signifera (Bates) is abundant in the three southern main islands of Japan, and is one of the common species appearing in deciduous broadleaved forests from May to July. It has been known, however, that the so-called *signifera* consists of populations with more or less different features, though detailed investigations of this group of species have been neglected as they are very common everywhere. The authors have been making field surveys on each population, and have already reported on the Tsushima population last year as one of the results (S. & A. Saito, 1988).

Kawahara (1983) and Mizuno (1983) pointed out that the tenth and eleventh antennal segments are tinted with white in females from Toyama Prefecture (by the former) and from Gifu Prefecture (by the latter). The present authors also reported a similar phenomenon on the individuals from Otari-mura at the northern part of Nagano Prefecture, and mentioned that such populations were found all over the area at the northern side of central Honshu, from Fukui Prefecture in the southwest to the northern part of Nagano Prefecture in the northeast (S. & A. Saito, 1984).

In the present paper, a new species, which has previously been regarded merely as a population of *P. signifera* in the Hokuriku District, will be described under the name of *Pidonia jasha*.

Before going further, the authors wish to express their hearty thanks to Dr. Shun-Ichi Uéno of the National Science Museum (Nat. Hist.), Tokyo, for his kind reading and criticizing the original manuscript of this paper, and to Miss Hiroko Nagaoka, Messrs. Souichi Yamada, Shin-Ichiro Komata, Toshinobu Matsumoto and Ryô Inagawa for offering valuable specimens for the present study.



Figs. 1–4. *Pidonia jasha* sp. nov. and *P. signifera* (BATES). —— 1, *P. jasha*, male; 2, *P. signifera*, male; 3, *P. jasha*, female; 4, *P. signifera*, female.

Pidonia* (*Pidonia*) *jasha S. et A. SAITO, sp. nov.

[Japanese name: Hokuriku-hime-hana-kamikiri]

(Figs. 1, 3, 5–6, 9–10, 14–16, 18)

Length: male 6.5–9.3 mm, female 7.0–10.0 mm (from mandibular tips to elytral apices). Breadth: male 1.5–2.3 mm, female 1.8–2.7 mm (across humeral angles of elytra).

Male. Head entirely black, with mouth-parts testaceous except for the apical part of each mandible. Antennae almost dark brown, 1st segment a little paler than the other ones, 3rd–10th segments slightly darkened towards respective apices. Prothorax entirely black, scutellum black. Meso- and metathoraces entirely black except for posterior central part of metasternum testaceous. Legs almost testaceous, with apical third of middle femur, apical half of hind one, and sometimes basal third of middle and hind tibiae black; apical parts of 1st and 2nd as well as all of 3rd and 4th tarsal segments, all of middle and hind tarsi and claws black. Elytra almost testaceous, each elytron provided with one black stripe on suture, two black spots at the lateral side before middle, one black lateral marking which is narrowed inwards and usually connected with the sutural stripe behind middle (sometimes free), and one black marking at the apical margin. Abdomen almost black except for middle parts of 4th and 5th sternites (sometimes 2nd to 5th) which are dark reddish brown.

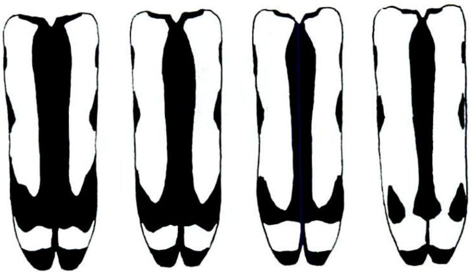


Fig. 5. Variation of elytral markings in the male of *P. jasha* sp. nov.

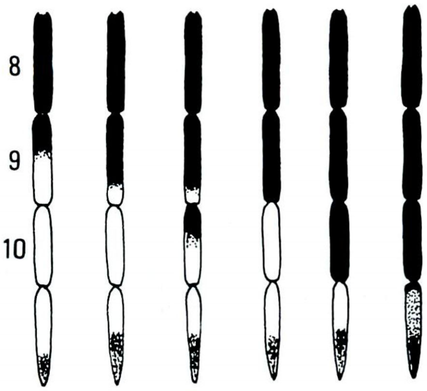
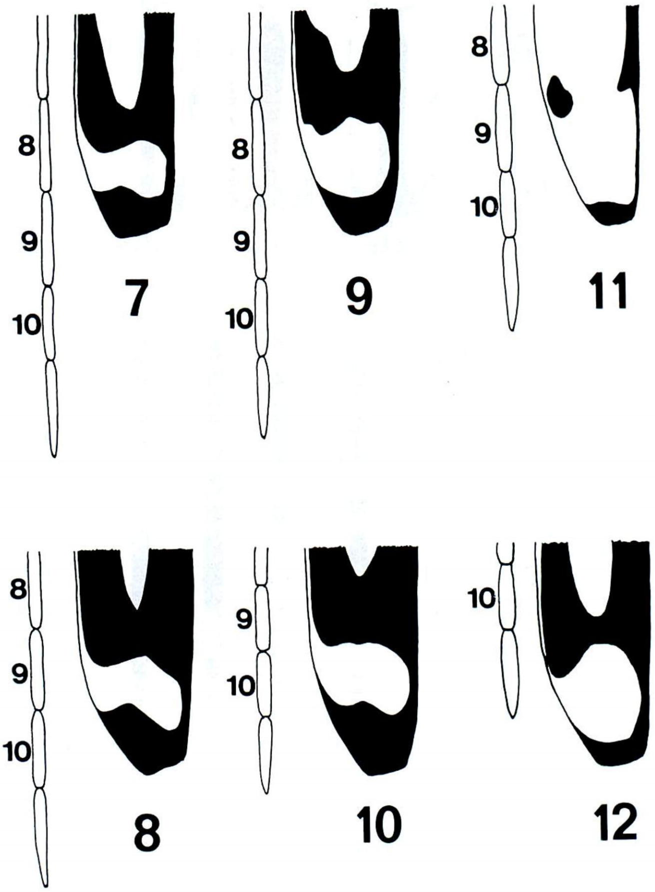


Fig. 6. Colour variation of female antennae in *P. jasha* sp. nov.

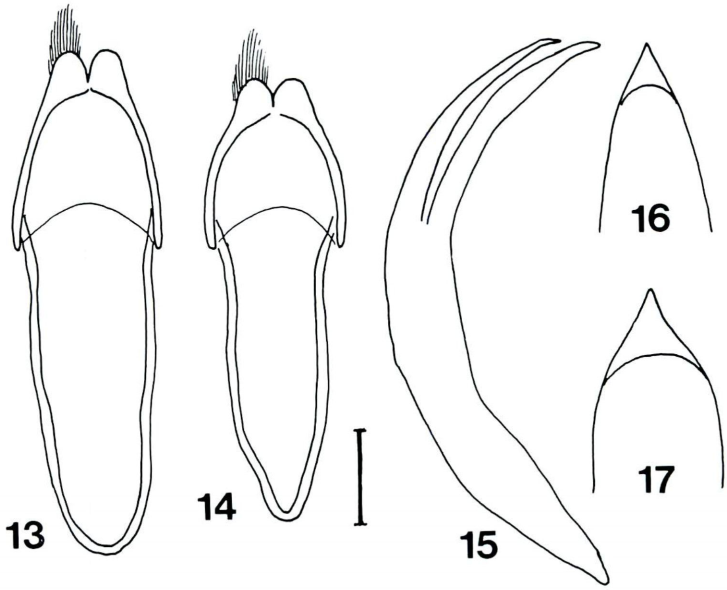
Head subrectangular, broader across eyes than length (1.4–1.5 : 1); surface densely covered with coarse punctures and short testaceous pubescence, bearing an obscure longitudinal furrow extending from frons to vertex along median line; eyes prominent laterally. Antennae slender, extending beyond elytral apex at the middle to the apex of 10th segment; 3rd–10th segments widest at the apical parts. Pronotum almost as long as width at posterior part or sometimes at middle (1–1.1 : 1), apparently swollen laterad and constricted both anteriorly and posteriorly; disc convex; surface covered with slightly denser and finer punctures than on head, and similarly pubescent to the latter, the pubescence being directed towards the posterior part of disc. Elytra 2.5–2.7 times as long as width between humeral angles; surface covered with sparser and larger punctures than on pronotum and with short testaceous pubescence; apex of each elytron narrowly rounded.

Male genitalia nearly membraneous near base, though gradually sclerotized towards apex. Median lobe regularly and rather strongly arcuate, especially in apical half; viewed dorsally, apical portion rather rapidly narrowed towards conspicuously projected apex. Lateral lobes relatively long, widest at apical fourth and shallowly bilobed at apex in dorsal view, each lobe being short and very broad, with rounded apex and bearing very long terminal hairs.

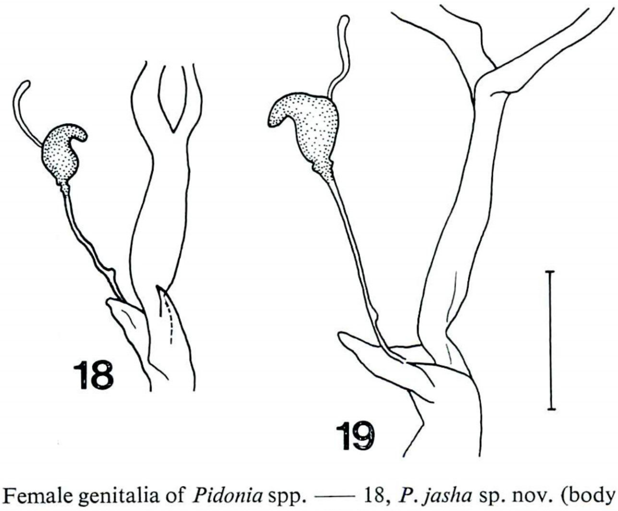


Figs. 7–12. Length of antenna in proportion to elytral length. —— 7, *P. signifera*, male (from Daibosatsu, Yamanashi); 8, same, female; 9, *P. jasha*, male (from Yashagaike, Fukui); 10, same, female; 11, *P. michinokuensis*, male (from Hakkôda, Aomori); 12, same, female.

Female. Obviously different from male in wider body, darker elytra and shorter antennae. Head broader across eyes than length (1.4–1.5: 1). Antennae barely reaching elytral apex by the last segment; almost black, 1st and 2nd a little paler than 3rd to 8th; 9th black, sometimes pale testaceous in apical half; 10th pale testaceous, sometimes black in basal half, rarely black throughout; last segment pale testeceous except for the apical half which is pale brown. Pronotum almost as long as width at the posterior part or sometimes at the middle (1–1.1: 1). Elytra 2.3–2.4 times as long as width between humeral angles; each black stripe and marking broader than in male, lateral spots connected with each other and extending to behind middle. Legs darker than in male, middle and hind ones almost black except for apical third of each femur testaceous. Abdomen almost testaceous, with the anterior lateral



Figs. 13–17. Male genitalia of *Pidonia* spp.; lateral lobes in dorsal view; median lobe in lateral view (15); apex of median lobe in dorsal view (16–17). —— 13, 17. *P. signifera* (from Daibosatsu, Yamanashi). —— 14–16. *P. jasha* sp. nov. (Scale: 0.25 mm.)



Figs. 18–19. Female genitalia of *Pidonia* spp. —— 18, *P. jasha* sp. nov. (body length 7.90 mm); 19, *P. signifera* (from Daibosatsu, Yamanashi; body length 10.05 mm). (Scale: 0.5 mm.)

side of 1st to 4th sternites black and the last sternite wholly dark brown.

Female genitalia as in Fig. 18. Spermatheca strongly curved at the apical part, constricted near the base, and with spermathecal gland at the middle lateral face;

Table 1. Diagnostic features of *Pidonia michinokuensis* HAYASHI, *P. jasha* sp. nov. and *P. signifera* (BATES).

Characters	Species name		
	michinokuensis (Tôhoku Dist.)	*jasha* sp. nov. (Hokuriku Dist.)	*signifera* (Kantô Dist.)
Antenna			
Male 5th: 6th	1: 0.70–0.80	1: 0.70–0.80	1: 0.75–0.80
Female	Not reaching or reaching elytral apex by last segment (Fig. 12)	Reaching elytral apex by last segment (Fig. 10)	Reaching elytral apex by 10th segment (Fig. 8)
5th: 6th	1: 0.65–0.70	1: 0.70–0.80	1: 0.70–0.75
Colour of 9th–last segments	Black	Almost pale testaceous, sometimes black	Black
Elytra (breadth: length)			
Male	Middle breadth <37% of elytral length	Middle breadth <35% of elytral length	Middle breadth <34% of elytral length
Female	Middle breadth <41% of elytral length	Middle breadth <43% of elytral length	Middle breadth <40% of elytral length
Legs in male	Entirely testaceous	Partially black	Partially black

spermathecal duct with a small protrusion before entering into bursa copulatrix.

Type series. Holotype: ♂, Yashagaike, Imajô-chô, Fukui Pref., 18 June 1989, S. SAITO leg. Allotype: ♀, same data as for the holotype. Paratypes: 18 ♂♂, 35 ♀♀, same data as for the holotype; 6 ♂♂, 10 ♀♀, same data as for the holotype, H. NAGAOKA leg.; 3 ♂♂, 3 ♀♀, same data as for the holotype, S. YAMADA leg.; 10 ♂♂, 15 ♀♀, same locality as for the holotype, 17 June 1989, S. SAITO leg.; 6 ♂♂, 20 ♀♀, same locality as for the holotype, same date, H. NAGAOKA leg.; 3 ♂♂, 3 ♀♀, same locality as for the holotype, same date, S. YAMADA leg.; 1 ♂, same locality as for the holotype, 20 May 1982, S. SAITO leg.; 9 ♂♂, 4 ♀♀, same locality as for the holotype, 15 June 1982, S. SAITO leg.; 2 ♂♂, 2 ♀♀, same locality as for the holotype, 15 June 1982, S. KOMATA leg.; 5 ♂♂, 1 ♀, Kinome-tôge, Tsuruga-shi, Fukui Pref., 19 May 1982, S. KOMATA leg.; 2 ♂♂, 3 ♀♀, Kinome-tôge, Tsuruga-shi, Fukui Pref., 19 May 1982, T. MATSUMOTO leg.; 1 ♂, Kinome-tôge, Tsuruga-shi, Fukui Pref., 16 June 1982, R. INAGAWA leg.; 5 ♂♂, 3 ♀♀, Ikenokouchi, Tsuruga-shi, Fukui Pref., 22 May 1982, S. KOMATA leg.; 10 ♂♂, 8 ♀♀, Ikenokouchi, Tsuruga-shi, Fukui Pref., 22 May 1982, T. MATSUMOTO leg.; 5 ♂♂, 3 ♀♀, Ikenokouchi, Tsuruga-shi, Fukui Pref., 22 May 1982, R. INAGAWA leg.; 1 ♂, 3 ♀♀, Mt. Nosakadake, Tsuruga-shi, Fukui Pref., 17 May 1982, S. SAITO leg.

The holo- and allotypes are preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo; the paratypes are distributed to the above collection and to the collection of the authors themselves.

Range. Honshu (northern parts of Kyoto, Gifu and Nagano Prefs., and Fukui and Toyama Prefs.)

Notes. This new species resembles *P. michinokuensis* Hayashi, 1981, and *P. signifera* (Bates, 1884). The differences between these three species are shown in Table 1 and Figs. 1–19. At first sight, especially in the elytral markings, male specimens of this species resemble those of *P. semiobscura* Pic, 1901, but can be distinguished from the latter by the black head and prothorax ventrally.

Most of the specimens examind were collected on the flowers of *Symplocos chinensis* f. *pilosa*, except for a few which were found on *Angelica* sp. and others.

要　約

斉藤秀生・斉藤明子：北陸地方産ヒメハナカミキリの1新種．—— 筆者らは，本州，四国，九州に広く分布し，5〜7月に落葉広葉樹林に現われる，ナガバヒメハナカミキリの各地の個体群について調査を行なっている．このうち，とくに北陸地方の個体群では雌の触角第10–11節が白色になるという事実が，川原 (1983)，水野 (1983)，および斉藤・斉藤 (1984) によって指摘されている．

この個体群について詳細な検討を加えた結果，体全体が幅広で，触角の長さや交尾器に顕著な差が見られ，本州，四国，九州に広く分布する個体群とは異なる別の種であることが明らかになったので，未記載の独立種と認めて，ここでホクリクヒメハナカミキリ *Pidonia jasha* と命名した．

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Elytra, Tokyo, **17** (2): 200, November 15, 1989

New Synonym of *Leptepania minuta* (Coleoptera, Cerambycinae), with Collecting Data of the Taiwanese Species

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Eleven species of molorchine cerambycids of the genus *Leptepania* have so far been known from Asia. They are always allopatric with the only exception of the two recorded from Taiwan, i. e. *L. minuta* Gressitt and *L. kukuanana* Chang. This is very strange in view of the usual dispersal and speciation of *Leptepania*. In November of 1987, I had an opportunity to examine the type series of Chang's species. My comparative study has revealed that *L. kukuanana* falls in the range of individual variation of *L. minuta*, no difference in the structure and coloration, especially in the maculation of elytra, having been detected. In this short communication, I will propose the synonymy of the above two *Leptepania*, and also will record recent collecting data of the Taiwanese species of the genus.

I wish to thank Mr. C.-C. Kuwan for his kind assistance in my examining the collection of the late Professor S-T. Chang, and to Messrs. H. Fujita, M. Ito, A. Nishiyama and S. Tsuchiya for their offer of material.

Leptepania minuta Gressitt

Leptepania minuta Gressitt, 1935, Philip. J. Sci., **58**, p. 265; type locality: Hassenzan, alt. 1,200 m; 1951, Longicornia, **2**, p. 169.

Leptepania kukuanana Chang, 1978, J. Agr. For., Taiwan, **27**, p. 61, fig. 2; type locality: Ku-kuan, Taichung Hsien. **Syn. nov.**

Specimens examined. 2 males (holotype and paratype of *L. kukuanana*), Ku-kuan, Taichung Hsien, the pupae collected on 6–V–1978, emerged on 12～14–VI–1978, S-T. Chang leg.; 1 male, Tinghsinfa, Liukuei County, Kaohsiung Hsien, 17–III–1978, T. Niisato leg.; 1 female, Chinfeng, Taitun Hsien, 13–III–1980, S. Tsuchiya leg.; 1 male, Taitung City, Taitung Hsien, 16–IV–1980, H. Fujita leg.; 1 female, Shengping, Liukei County, 20–V–1980, A. Nishiyama leg.

Leptepania sakaii Hayashi

Leptepania longicollis: Kano, 1939, Annot. zool. japon., **18**, p. 30, pl. 2, fig. 2; new locality: Botel Tobago (=Lanyu Island). —— Gressitt, 1951, Longicornia, **2**, p. 169.

Leptepania sakaii Hayashi, 1974, Bull. Osaka Jonan Women's Jr. Coll., **9**, p. 23; type locality: Lanyu Island, off SE coast of Taiwan.

Specimens examined. 1 male and 1 female, Lanyu Island, Taitung Hsien, 23–III–1976, M. Ito leg.; 1 female, Ryouren, Lanyu Island, 3–III–1980, S. Tsuchiya leg.

Elytra, Tokyo, **17** (2): 201–233, November 15, 1989

Female Reproductive Organs of Lepturine Cerambycid Beetles from Japan, with Reference to their Taxonomic Significance (Part 2)

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Abstract In the second part of the study on female reproductive organs of lepturine cerambycid beetles, the Lepturini through the Necydalini are dealt with, and a general discussion on their taxonomic significance and references are given.

Tribe Lepturini

Grammoptera chalybeella BATES, 1884

(Fig. 25)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 7, fig. 7.

Collecting data of the material used. Sugenuma, Katashina-mura, Gunma Pref., 21–VII–1980, A. TAKASU leg.

Paraproct of moderate length, narrow, with baculi almost straight, thickened at base; valvifer indistinct; coxite baculi almost straight, more or less thick though thin posteriorly; coxite lobes hardly sclerotized, obtusely pointed at the apices, and bearing long tactile hairs; stylus abaxially articulated to the lateral face of coxite lobe, very narrow, lightly sclerotized, and with tactile hairs; dorsal baculi almost straight; proctiger baculi rather long and straight; vaginal plates narrow and more or less falciform, heavily sclerotized, fused to each other and forming a V-shaped plate; bursa copulatrix short, and not clearly distinguishable from the spermathecal duct; spermatheca rather narrow, strongly curved at middle, and with short duct, which arises in the lateral face of the base of capsule and enters into the apex of bursa copulatrix.

Alosterna tabacicolor (DE GEER, 1775)

(Fig. 26)

Collecting data of the material used. Horoka, Hokkaido, other data unknown.

Paraproct of moderate length, narrow, its baculi moderately arcuate and thickened anteriorly; valvifer indistinct; coxite baculi simple though slightly thickened at base; coxite lobes hardly sclerotized, obtusely pointed at apices, and bearing tactile hairs; stylus very narrow, lightly sclerotized, abaxially articulated to the lateral face of coxite lobe, and with tactile hairs; dorsal baculi feebly sinuate; proctiger baculi long and straight; vaginal plates narrow and straight, heavily sclerotized, fused to each other and forming a V-shaped plate; vagina somewhat broadened anteriorly; bursa copulatrix short, and not clearly distinguishable from the spermathecal duct; spermatheca more or less narrow, well constricted at base, curved at middle and somewhat narrowed towards apex; spermathecal duct short and thin, entering into the apex of bursa copulatrix.

Ohbayashia nigromarginata nigromarginata (HAYASHI, 1953)

(Fig. 27)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 7, fig. 6.

Collecting data of the material used. Mt. Amagi, Shizuoka Pref., other data unknown.

Paraproct of moderate size, each baculum feebly sinuate; valvifer indistinct; coxite baculi thick at the base, thinned towards the middle, with inwardly spread sclerotized part at apical third, and thinned again posteriorly; coxite lobes sclerotized at each inner part, with tactile hairs; stylus sclerotized except for the apex, and with tactile hairs; dorsal baculi feebly curved, and with a short inner branch near the divided portion of coxite; proctiger with curved baculum; vaginal plates very long, somewhat broad at the bases, and slightly narrowed towards obtuse apices; vagina strongly curved at base; bursa copulatrix short, abruptly narrowed at about middle, and then narrowed towards acute apex; spermatheca somewhat swollen near the base, curved at middle, somewhat falciform in apical half, narrowed towards obtusely pointed apex, and with the gland at the outer corner; spermathecal duct short, thickened at base, and widely entering into the middle part of bursa copulatrix.

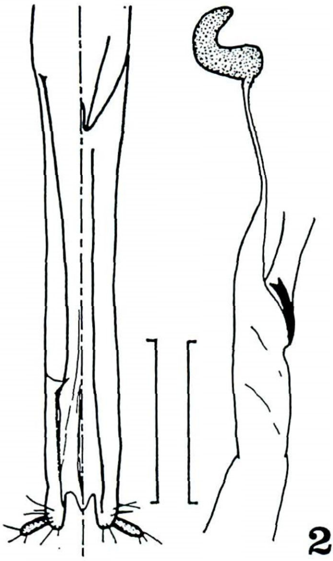
Pyrrhona laeticolor laeticolor BATES, 1884

(Fig. 28)

Collecting data of the material used. Mt. Amagi, Shizuoka Pref., other data unknown.

Paraproct rather long, with baculi thin and slightly sinuate at apex; valvifer indistinct; coxite narrowed towards apical part, each baculum thickened and dilated anteriorly, with the sclerotized part reaching the side margin at base; each coxite lobe sclerotized at the inner side, and bearing tactile hairs; stylus of moderate size, with tactile hairs at apex; dorsal baculi long and slightly sinuate at the posterior part; proctiger baculi straight; vaginal plates wide at base and narrowed towards acute apices;

Figs. 25–28. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 25, *Grammoptera chalybeella*; 26, *Alosterna tabacicolor*; 27, *Ohbayashia nigromarginata nigromarginata*; 28, *Pyrrhona laeticolor laeticolor*. (Scale: 0.5 mm.)



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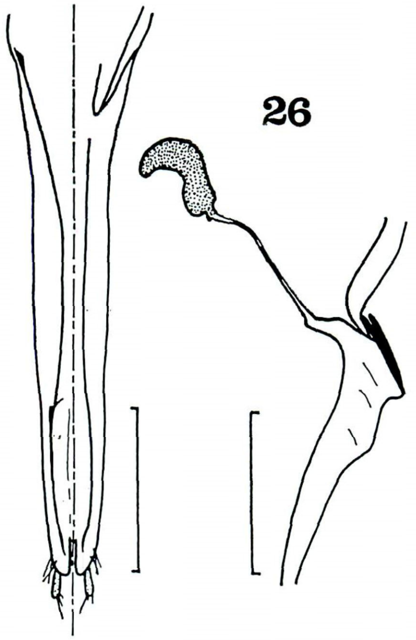

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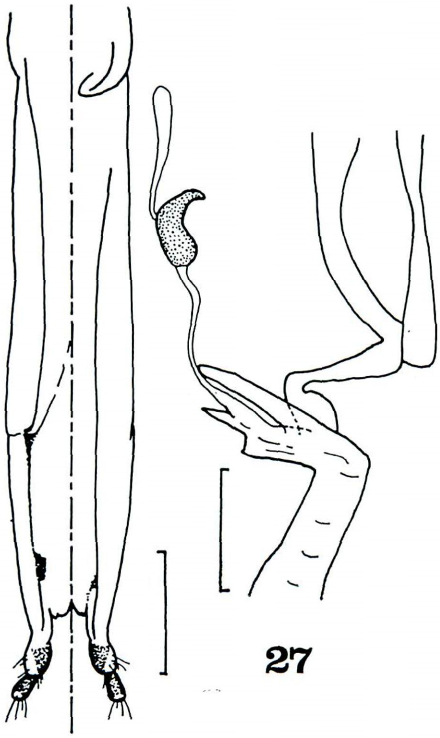

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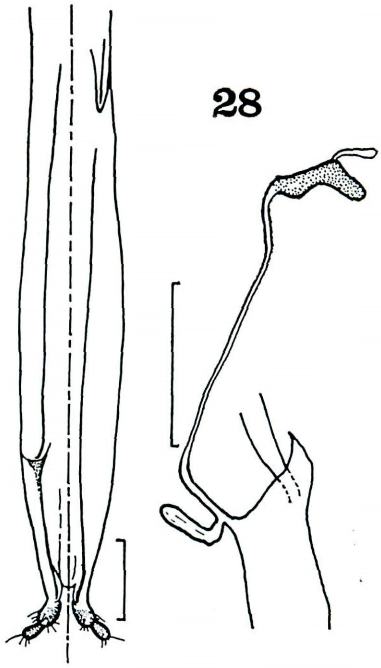

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bursa copulatrix short and narrow, distinctly separated from vagina, and strongly curved at basal third; spermatheca narrow, slightly swollen at the inner basal part, gently bent at middle, with the outer margin almost straight in basal half, and with gland at the outer corner; spermathecal duct simple, somewhat thickened at the base, joining bursa copulatrix near its base and entering into vagina.

Pachypidonia bodemeyeri (PIC, 1934)

(Fig. 29)

Collecting data of the material used. Mt. Tsurugi, Tokushima Pref., 12–VIII–1955, S. SHINONAGA leg.

Paraproct broad, each baculum thick and divided at the base, with the outer branch longer than one-third the inner one; valvifer indistinct; coxite well constricted at the posterior part, and somewhat uneven on the surface, each baculum divided at base, the outer branch extending to the apex, the inner one short, continuing posteriorly by a lightly sclerotized line and gradually approaching to the outer branch to join it at middle; coxite lobes very short and rounded, directed obliquely laterad, sclerotized except for the bases, with tactile hairs; stylus very small and ovoid, with tactile hairs; dorsal baculum thick and almost straight; proctiger baculi straight; vaginal plates long and broad, each almost parallel-sided and unequally bifid at the apex; vagina broadened anteriorly; bursa copulatrix finger-shaped, more or less broadened at base; spermatheca nearly sigmoidal, broadest at middle, narrowed towards both apex and base, with gland at the lateral face of the outer corner; spermathecal duct short, sinuate at middle, broadened in basal half, and entering into basal third of bursa copulatrix.

Nivellia sanguinosa (GYLLENHAL, 1827)

(Fig. 30)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 102, pl. 7, fig. 5.

Collecting data of the material used. Mt. Rausudake, Hokkaido, 16–VII–1980, T. SHIMOMURA leg.

Paraproct constricted near middle, baculi lightly arcuate; valvifer indistinct; coxite gradually narrowed towards the apical part, baculi inwardly divided at proximal end and also at basal fourth, the former branch being very short, and the latter extending anteriad for a short distance; coxite lobes long, subcylindrical, and bearing long tactile hairs; stylus sclerotized except for apex, with long tactile hairs; dorsal baculi almost straight; proctiger baculi slightly curved; vaginal plates broad at bases, and narrowed towards acute apices; vagina bent and broadened anteriorly; bursa copulatrix con-

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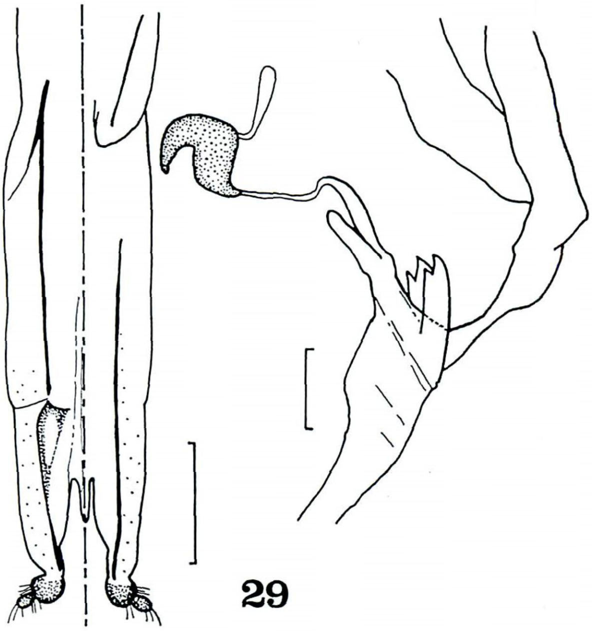
Figs. 29–32. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 29, *Pachypidonia bodemeyeri*; 30, *Nivellia sanguinosa*; 31, *Judolia japonica*; 32, *Judolia cometes*. (Scale: 0.5 mm.)



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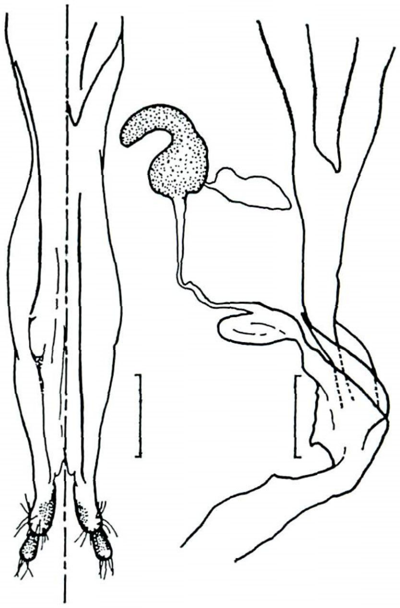

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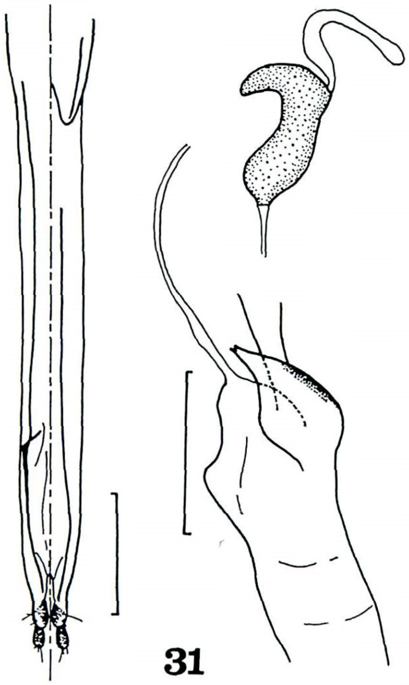

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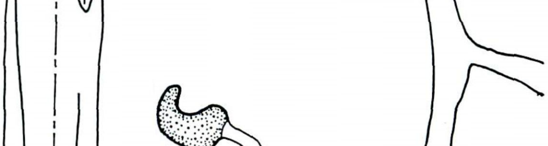

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stricted near the middle, and oval in apical half; spermatheca globose in basal half, narrowed and strongly bent at middle, and curved and almost parallel-sided in apical half, with the gland near its base; spermathecal duct short, imperfectly coiled at middle, and entering into the middle of the oval apical part of bursa copulatrix.

Judolia japonica (TAMANUKI, 1942)

(Fig. 31)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 7, fig. 11.

Collecting data of the material used. Mt. Daibosatsu, Yamanashi Pref., 19–VII–1978, A. TAKASU leg.

Paraproct narrow, its baculi thin and feebly curved; valvifer indistinct; coxite gradually narrowed towards apex behind middle, with slightly curved baculi which are thick anteriorly; coxite lobes sclerotized at each inner side, and with tactile hairs; stylus sclerotized, and with tactile hairs; dorsal baculi feebly sinuate and slightly longer than paraproct baculi; proctiger baculi almost straight; vaginal plates very broad at middle, then rapidly narrowed towards apices, and somewhat sclerotized along the outer margins, apex of each plate slightly cleft; vagina more or less broadened anteriorly; bursa copulatrix not defined; spermatheca relatively narrow, abruptly bent at apical third, narrowed towards apex, and well constricted at base, with the gland at the outer corner; spermathecal duct directly entering into vagina at its end.

Judolia cometes (BATES, 1884)

(Fig. 32)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 7, fig. 12.

Collecting data of the material used. Kohsawa, Katashina-mura, Gunma Pref., 26–VII–1979, A. TAKASU leg.; Marunuma, Katashina-mura, Gunma Pref., 21–VII–1980, A. TAKASU leg.

Paraproct rather short and broad, with its baculi almost straight; valvifer indistinct; coxite gradually narrowed towards apex, its baculi thin and feebly sinuate, slightly thickened and with a very short inner branch at the base; coxite lobes lightly sclerotized at each inner side, and bearing long tactile hairs; stylus lightly sclerotized, with long tactile hairs; dorsal baculi feebly curved at the posterior part, almost as long as the paraproct ones; proctiger baculi straight; vaginal plates widely protruding at bases, and narrowed towards apices; vagina abruptly bent near the anterior end; bursa copulatrix absent; spermatheca suddenly bent at middle, gradually narrowed towards apex, and with the gland at the lateral face near base; spermathecal duct sinuate, and directly entering into vagina at the end.

Note. Besides the two preceding species, the bursa copulatrix is not defined in *J. sexmaculata* (LINNÉ), either. This feature can be regarded as being characteristic of *Judolia*.

Judolidia bungi (PIC, 1902)

(Fig. 33)

Collecting data of the material used. Sugenuma, Katashina-mura, Gunma Pref., 21–VII–1980, M. HARADA leg.

Paraproct short, its baculi almost straight; valvifer indistinct; coxite baculi fairly thick and inwardly bent near the anterior end with an angle, and thinned posteriorly; coxite lobes slightly sclerotized at each inner side, and bearing tactile hairs; stylus slightly sclerotized and with long tactile hairs; dorsal baculum slightly sinuate; proctiger baculi almost straight; vaginal plates broad at bases, abruptly curved at middle, and sharply narrowed towards acute apices; vagina gently broadened anteriad, weakly sclerotized at the portion to which the vaginal plates attach; bursa copulatrix indefinite; spermatheca broadest near base, abruptly bent at the apical third, and gradually narrowed towards apex, with the gland opening at the broadest part; spermathecal duct thick and widely curved, and directly entering into the vagina at its end.

Pseudallosterna misella (BATES, 1884)

(Fig. 34)

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 24–VII–1978, A. TAKASU leg.; same locality, 25–VII–1979, A. TAKASU leg.

Paraproct of moderate length, narrow, its baculi almost straight; valvifer indistinct; coxite baculi simple, slightly arcuate; coxite lobes hardly sclerotized, blunt at apices, and with tactile hairs; stylus very short and narrow, lightly sclerotized, abaxially articulated to the lateral face of coxite lobe, and with tactile hairs; dorsal baculi almost straight, and starting from near the posterior edge of proctiger; proctiger baculi extremely long, and almost straight; vaginal plates rather broad at bases, well sclerotized along the outer margins, fused to each other, and forming a V-shaped plate; bursa copulatrix short finger-shaped; spermatheca nearly C-shaped, with narrowed apex and small protruding basal part; spermathecal duct very short, arising from the lateral face of the base of capsule, and entering into the middle part of bursa copulatrix.

Note. The two species, *Alosterna tabacicolor* and *Grammoptera chalybeella*, and this species are very similar to one another in the following characteristic features of the female reproductive organs: the paraproct is narrow; the coxite lobes are obtusely pointed and hardly sclerotized; the stylus is very narrow and articulated to coxite lobes abaxially; the vaginal plates are well sclerotized, fused to each other, and form a V-shaped plate; the spermatheca is narrow, with the duct arising from the lateral face of its base.

Kanekoa azumensis (MATSUSHITA et TAMANUKI, 1942)

(Fig. 35)

Collecting data of the material used. Kotozura, Okutama, west of Tokyo, 17–IV–1979, A. TAKASU leg.

Paraproct rather short, its baculi feebly sinuate; valvifer indistinct; coxite gradually narrowed towards apex, its baculi simple and slightly sinuate; inner distal part of each coxite lobe sclerotized, and bearing some tactile hairs; stylus subcylindrical, and with tactile hairs at the apex; dorsal baculi slightly sinuate; proctiger baculi almost straight; vaginal plates broad at base and gradually narrowed towards apices; vagina broadened anteriorly; bursa copulatrix tubular, rather long and narrow; spermatheca strongly curved near the middle, and narrowed towards the apex; spermathecal duct thin, entering into the middle part of bursa copulatrix.

Anoploderomorpha monticola NAKANE, 1955

(Fig. 36)

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 23–VII–1978, A. TAKASU leg.

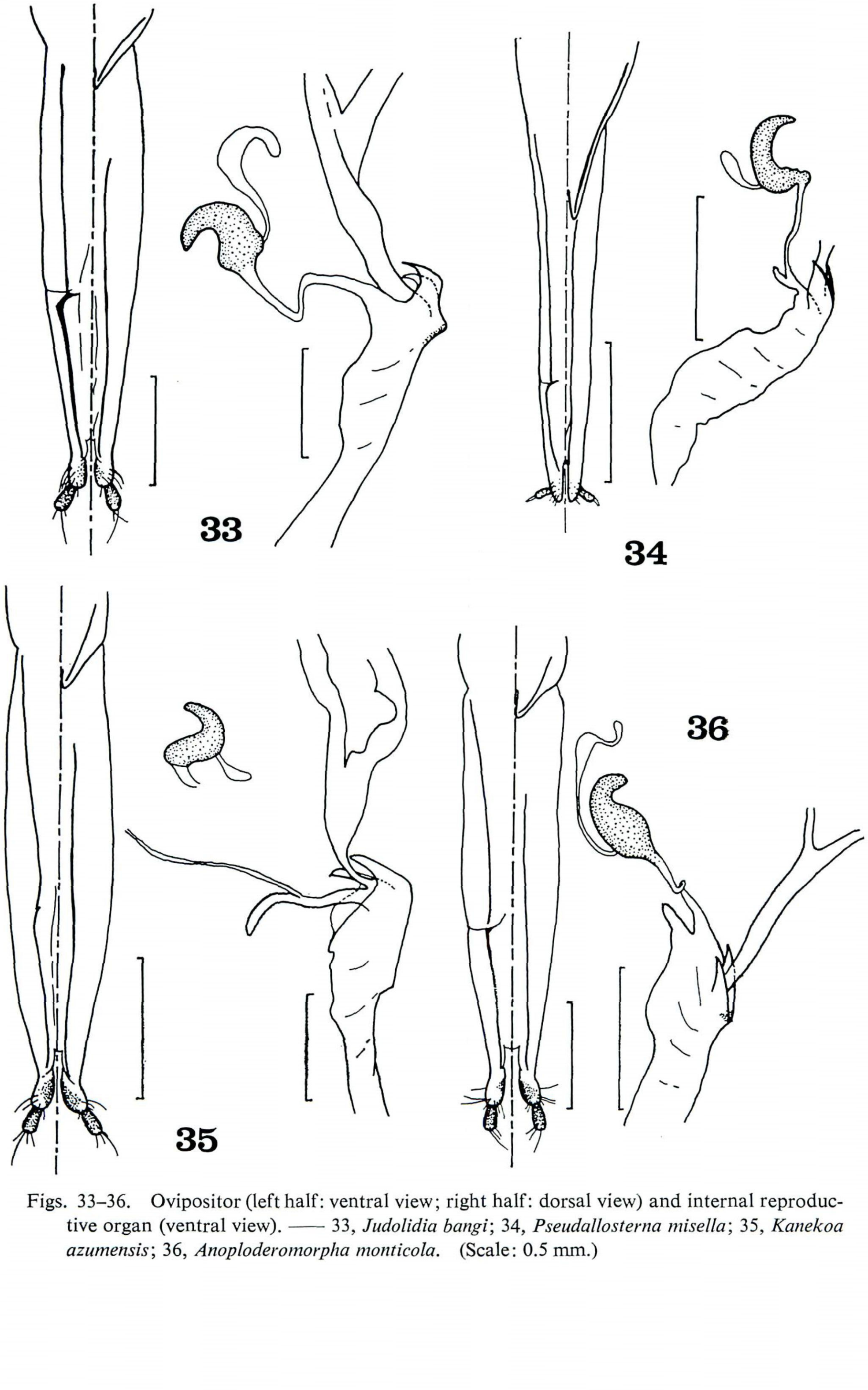
Paraproct of moderate length, baculi almost straight; valvifer indistinct; coxite gradually narrowed towards the apical part, baculi simple and straight; coxite lobes subcylindrical, sclerotized at the inner part, and with rather long tactile hairs; stylus moderately sclerotized and bearing rather long tactile hairs; dorsal baculi very slightly sinuate; vaginal plates very short, narrowed towards acute apices, and slightly sclerotized at bases; vagina broadened anteriorly; bursa copulatrix short and narrow, somewhat broadened at base; spermatheca subovoid at the basal two-thirds, bent at the apical third, with obtuse apex, the gland attaching to the lateral face near base; spermathecal duct thick and very short, coiled once at middle, and directly entering into vagina.

Brachyleptura pyrrha (BATES, 1884)

(Fig. 37)

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 23–VII–1978, A. TAKASU leg.

Paraproct long, its baculi feebly sinuate, and briefly divided at the anterior end; valvifer indistinct; coxite gradually narrowed towards apex, baculi thickened and very briefly branched off inwards at the base, extending towards apex in straight lines, though feebly sinuate before apical division; coxite lobes rather long, sclerotized at each inner part, and bearing tactile hairs; stylus moderately sclerotized, with tactile hairs; dorsal baculi long and almost straight; proctiger baculi slightly curved; vaginal plates broad at bases, but narrowed towards acuminate apices; vagina with small protrusion behind



Figs. 33–36. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 33, *Judolidia bangi*; 34, *Pseudallosterna misella*; 35, *Kanekoa azumensis*; 36, *Anoploderomorpha monticola*. (Scale: 0.5 mm.)

bursa copulatrix which is very narrow and tubular; spermatheca rather broad, strongly curved at the apical third, with the gland attaching to the lateral face near base; spermathecal duct short and thick, imperfectly coiled at middle, and entering into the basal portion of bursa copulatrix.

Anastrangalia scotodes scotodes (BATES, 1873)

(Fig. 38)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 102, pl. 7, fig. 9.

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 21–VII–1978, A. TAKASU leg.

Paraproct rather long, with baculi feebly sinuate; valvifer indistinct; coxite slightly narrowed posteriad, its baculi simple and feebly sinuate; coxite lobes moderately sclerotized at each inner part, and with tactile hairs; stylus somewhat long, bearing tactile hairs; dorsal baculi long and slightly sinuate; proctiger baculi straight; vaginal plates somewhat broad at bases, and narrowed towards acuminate apices; vagina more or less swollen anteriorly and lightly sclerotized behind bursa copulatrix, which is short, weakly constricted at the base, and narrowed towards apex; spermatheca broadest near base to which the gland attaches, narrowed at middle, abruptly curved and forming a hook-shape apically; spermathecal duct short, almost straight, and entering into the middle part of bursa copulatrix.

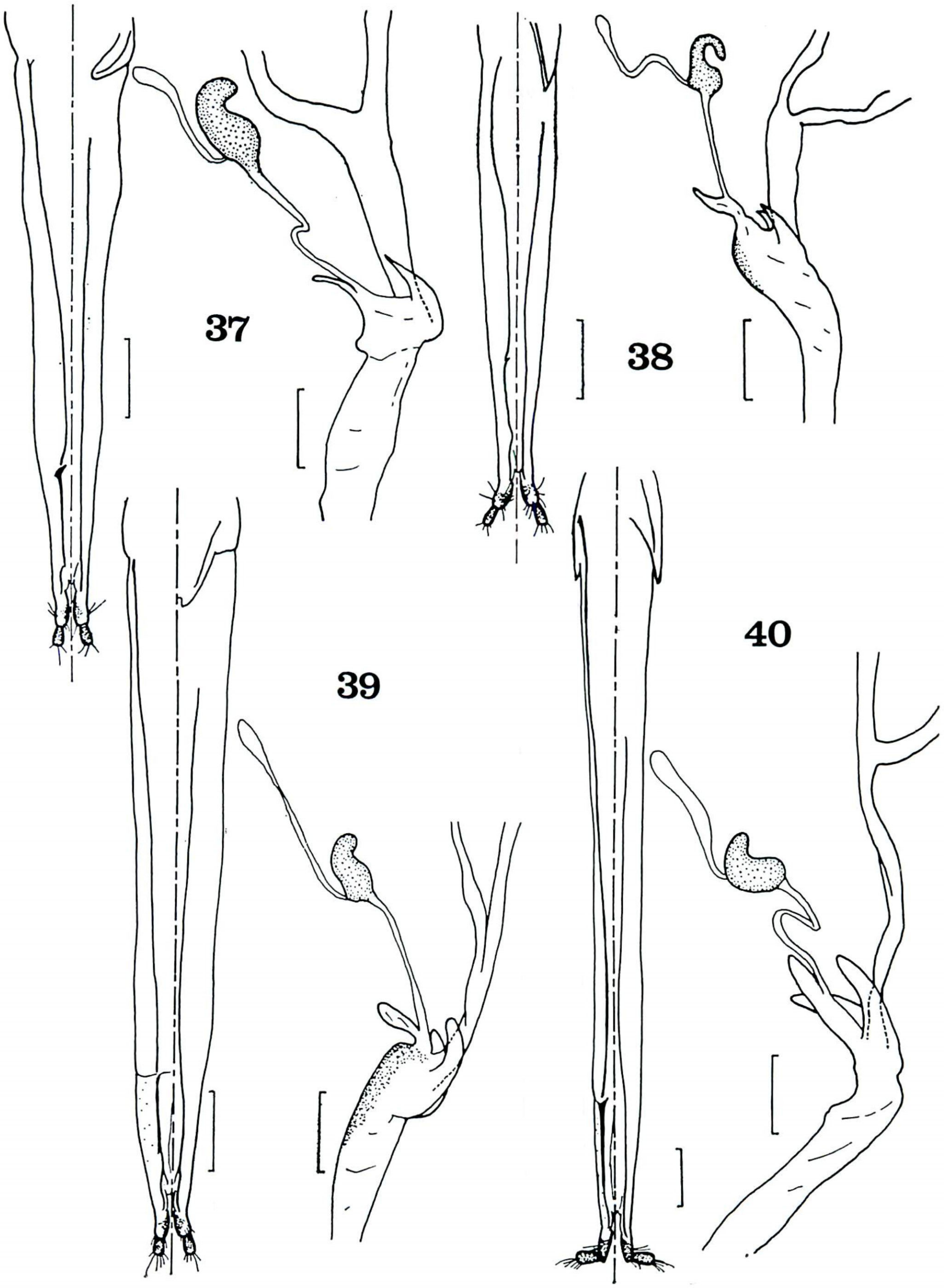
Corymbia succedanea (LEWIS, 1879)

(Fig. 39)

Collecting data of the material used. Nishizawa-keikoku, Yamanashi Pref., 13–VIII–1979, M. SAKAI leg.

Paraproct very long, with almost straight baculi; valvifer indistinct; coxite somewhat uneven on the surface in basal half, its baculi more or less thick, divided at the apical third, the inner branch briefly extending posteriad, the outer one reaching coxite lobe and feebly sinuate; coxite lobes moderately sclerotized at each inner part, and with tactile hairs; stylus of moderate size, with tactile hairs; dorsal baculi almost of the same length as the paraproct ones, divided just before reaching coxite lobes as in the case of coxite baculi; proctiger baculi almost straight; vaginal plates more or less arcuate, almost parallel-sided and with rounded apices; vagina somewhat widened anteriorly, and with widely sclerotized part behind bursa copulatrix which is short and tubular; spermatheca gently curved at apical third, and with the gland near the base; spermathecal duct relatively thick, straight, and entering into the base of bursa copulatrix.

Note. In the other two Japanese species of the genus, *C. variicornis* (DALMAN) and *C. igai* (TAMANUKI), the paraproct is also very long. Perhaps these features can



Figs. 37–40. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 37, *Brachyleptura pyrrha*; 38, *Anastrangalia scotodes scotodes*; 39, *Corymbia succedanea*; 40, *Konoa granulata*. (Scale: 0.5 mm.)

be regarded as being characteristic of *Corymbia*.

Konoa granulata (BATES, 1884)

(Fig. 40)

Collecting data of the material used. Etanbetsu, Asahikawa, Hokkaido, 2–VIII–1978, T. MATSUMOTO leg.; Kensetsudaira, Katashina-mura, Gunma Pref., 24–VII–1980, A. TAKASU leg.

Paraproct exceedingly long, its baculi slightly thickened at the anterior end and almost straight; valvifer indistinct; coxite slightly narrowed towards apex, each baculum fairly thick, briefly forked at the anterior end, thinned and feebly sinuate posteriorly; each coxite lobe narrow and relatively pointed at apex, sclerotized except for basal half, and bearing tactile hairs; stylus relatively large, abaxially articulated to the lateral face of coxite lobe, with tactile hairs; dorsal baculi thin, slightly sinuate, shorter than the paraproct ones, their anterior ends being widely distant from proctiger; proctiger baculi almost straight; median oviduct long; vaginal plates broad at bases, gently arcuate, and narrowed towards blunt apices; vagina abruptly bent at the base; bursa copulatrix tubular, rather long and broad; spermatheca broad in basal two-thirds, almost rectangularly bent at apical third, and gradually narrowed towards apex, with the gland attaching to the outer corner; spermathecal duct thick, sigmoidally curved, and entering into the middle part of bursa copulatrix.

Leptura (Leptura) mimica BATES, 1884

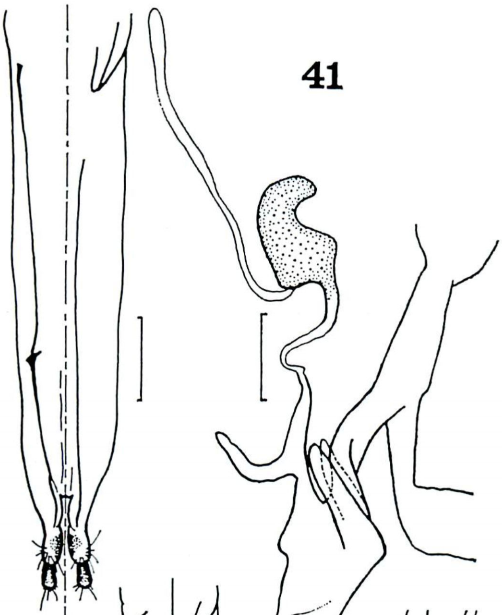
(Fig. 41)

KUBOKI, 1981, Elytra, Tokyo, **9**, p. 61, fig. 4 [*arcuata*]; MAKIHARA & SAITO, 1985, Elytra, Tokyo, **12** (2), pp. 5–8, figs. 24–25, 28–29.

Collecting data of the material used. Kohsawa, Katashina-mura, Gunma Pref., 23–VII–1980, A. TAKASU leg.

Paraproct rather short, baculi slightly thickened anteriorly, and slightly sinuate; valvifer indistinct; coxite broad, narrowed from before the divided part, each baculum thickened and briefly branched off inwards at the base, and divided before the apical lobe, the inner branch briefly extending to gonopore, the outer one feebly sinuate and reaching coxite lobe which is moderately sclerotized at the inner part with tactile hairs; stylus sclerotized except for apex, and bearing tactile hairs; dorsal baculi very slightly sinuate posteriad; proctiger baculi almost straight; vaginal plates long, straight, and gradually narrowed towards blunt apices; vagina with small protrusion behind bursa copulatrix, the latter finger-shaped, arcuate and clearly separated from vagina; sper-

Figs. 41–44. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 41, *Leptura* (*Leptura*) *mimica*; 42, *Leptura* (*Leptura*) *ochraceofasciata ochraceofasciata*; 43, *Leptura* (*Nakanea*) *vicaria vicaria*; 44, *Leptura* (*Pedostrangalia*) *variicornis*. (Scale: 0.5 mm.)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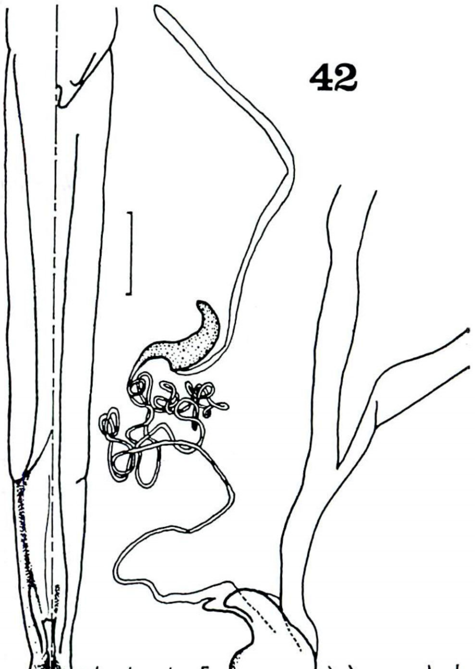
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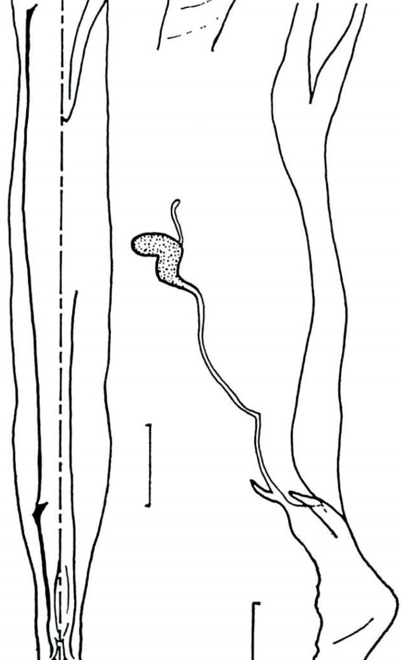
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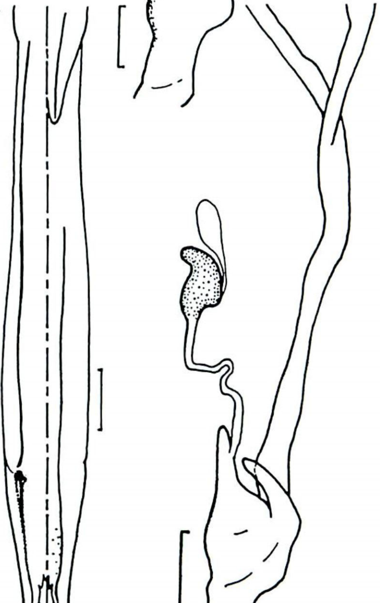
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matheca well constricted at base, broadest near base, narrowed towards the middle, and strongly curved in apical third, with the gland attaching to the outer basal corner; spermathecal duct short and broad, curved at middle, joining with bursa copulatrix and then entering into vagina.

Leptura* (*Leptura*) *ochraceofasciata ochraceofasciata (MOTSCHULSKY, 1861)

(Fig. 42)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 102, pl. 9, figs. A–L; 1981, Elytra, Tokyo, **9**, pp. 61–62, fig. 5.

Collecting data of the material used. Nishizawa-keikoku, Yamanashi Pref., 13–VIII–1979, M. SAKAI leg.

Paraproct rather long and narrow, with arcuate baculi; valvifer indistinct; coxite gradually narrowed towards the apical part, its baculi not rod-like in basal three-fifths but rather heavily sclerotized, rod-like and feebly sinuate in apical two-fifths, and with a short inner branch, which extends to gonopore; coxite lobes sclerotized at each inner part, and with some tactile hairs; stylus moderate in size, with long tactile hairs; dorsal baculi long and feebly sinuate; proctiger baculi inwardly curved at the distal portion; vaginal plates broad, somewhat curved, and narrowed towards apices; vagina more or less swollen anteriorly, slightly sclerotized at the swollen portion behind bursa copulatrix which is short; spermatheca somewhat reflexed at base, suddenly broadened at basal third, then moderately curved, and gradually narrowed towards apex, with the gland attaching to the lateral face of the broadest portion; spermathecal duct thin, extremely long, intricately coiled, somewhat thickened at the end, and entering into bursa copulatrix.

Notes. Besides the two species described above, I have examined the female reproductive organs of other six species belonging to the subgenus *Leptura*. They are diversified in the length of paraproct as follows: it is very long in *L. latipennis* (MATSUSHITA); fairly long in *L. duodecimguttata duodecimguttata* FABRICIUS, *L. ochraceofasciata ochraceofasciata*, *L. o. amamiana* HAYASHI, *L. kusamai* OHBAYASHI et NAKANE and *L. yakushimana* (TAMANUKI); moderate in *L. dimorpha* BATES, *L. mimica* and *L. subtilis* BATES. In *L. ochraceofasciata ochraceofasciata*, *L. o. amamiana* and *L. kusamai*, the spermathecal duct is extremely long and intricately coiled; this feature is peculiar to the two species among the Japanese lepturines.

Leptura* (*Nakanea*) *vicaria vicaria (BATES, 1884)

(Fig. 43)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 8, fig. 18.

Collecting data of the material used. Kohsawa, Katashina-mura, Gunma Pref., 23–VII–1979, A. TAKASU leg.

Paraproct long, each baculum thickened anteriorly; valvifer indistinct; coxite narrow, gradually narrowed posteriad, its baculi thick and briefly branched off inwards at the anterior end, thin and sinuate posteriorly; coxite lobes sclerotized at each inner part, and with tactile hairs; stylus moderately sclerotized, and bearing tactile hairs at the apex; dorsal baculi shorter than paraproct baculi, slightly sinuate; proctiger baculi long, more or less arcuate; median oviduct very long; vaginal plates narrow, narrowed towards apices; vagina curved proximally; bursa copulatrix small, tubular in apical half, and broadened in basal half; spermatheca small, rectangularly curved at middle, not narrowed towards apex, which is rounded, and with the gland at the outer corner; spermathecal duct thin, imperfectly coiled once, and entering into the middle portion of bursa copulatrix.

Leptura (Pedostrangalia) variicornis (MATSUSHITA, 1933)

(Fig. 44)

Collecting data of the material used. Rusha, Shiretoko-rindô, Hokkaido, 18–VII–1980, T. SHIMOMURA leg.

Paraproct rather long, its baculi slightly sinuate; valvifer indistinct; coxite gradually narrowed posteriad, its baculi thickened anteriorly, thin and feebly sinuate posteriorly; coxite lobes rather broad, moderately sclerotized at each inner part, and bearing tactile hairs; stylus sclerotized except for apex, with tactile hairs; dorsal baculi slightly shorter than the paraproct ones, and feebly sinuate posteriad; proctiger baculi long and almost straight; median oviduct very long; vaginal plates slightly arcuate, and gradually narrowed towards blunt apices; vagina broadened anteriorly; bursa copulatrix tubular; spermatheca abruptly broadened near base, gently bent at apical fourth; spermathecal duct thick, somewhat wavy, and entering into the apical part of bursa copulatrix.

Leptura (Pedostrangalia) femoralis (MOTSCHULSKY, 1860)

(Fig. 45)

Collecting data of the material used. Mt. Hotaka, Katashina-mura, Gunma Pref., 25–VII–1978, A. TAKASU leg.

Paraproct of moderate size, with thick and rather strongly arcuate baculi; valvifer indistinct; coxite slightly narrowed towards apical lobes, its baculi thick anteriorly and sinuate posteriorly; coxite lobes very broad, sclerotized at the inner part, and bearing short tactile hairs; stylus moderate in size, sclerotized except for apex, and with tactile hairs; dorsal baculi thin and feebly sinuate, with somewhat roughened field inwards, whose posterior edge is obliquely folded; proctiger baculi almost straight; vaginal plates broad at bases, narrowed at middle, and almost parallel-sided in apical halves, and weakly sclerotized throughout; vagina somewhat dilated near the anterior end;

bursa copulatrix narrow and tubular; spermatheca broadest and strongly bent at middle, almost straight at the outer side of basal half, and narrowly rounded at the apex, with the gland attaching to the outer corner; spermathecal duct thick, wavy, and entering into the basal portion of bursa copulatrix.

***Leptura (Megaleptura)* regalis (BATES, 1884)**

(Fig. 46)

Collecting data of the material used. Odamiyama, Ehime Pref., 2–VIII–1970, Y. KUSUNOKI leg.

Paraproct very long, its baculi slightly sinuate; valvifer indistinct; coxite well narrowed towards the divided portion, its baculi thick anteriorly and sinuate posteriorly; coxite lobes sclerotized at the inner part, with long tactile hairs; stylus sclerotized except for apex, and bearing long tactile hairs; dorsal baculi very long, and almost straight; proctiger baculi almost straight; vaginal plates very broad, hardly narrowed towards apices, which are not pointed; vagina somewhat swollen anteriorly; bursa copulatrix tubular; spermatheca weakly constricted near base, bent at apical third, and pointed at the apex; spermathecal duct very thick, widely entering into the basal part of bursa copulatrix.

***Oedecnema dubia* (FABRICIUS, 1781)**

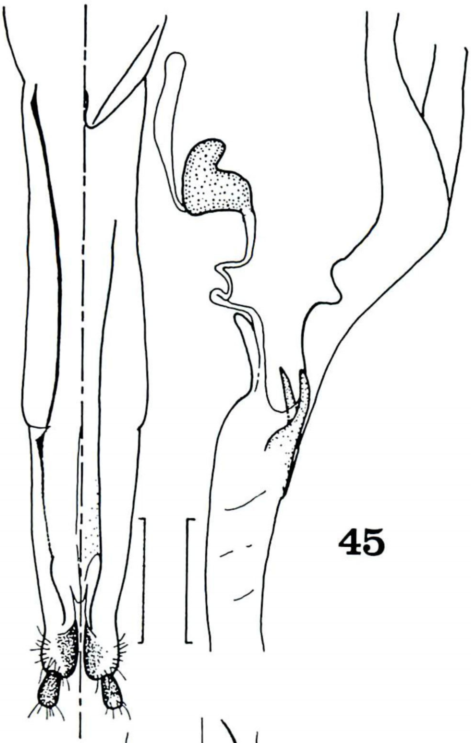
(Fig. 47)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 7, fig. 14.

Collecting data of the material used. Peipan, Hokkaido, 15–VII–1974, collector unknown.

Paraproct long with feebly sinuate baculi; valvifer indistinct; coxite narrowed towards apical lobe, its baculi slightly thickened anteriorly; coxite lobes weakly sclerotized at each inner part, and with tactile hairs; stylus sclerotized except for apex, and bearing tactile hairs; dorsal baculi almost straight, and a little shorter than the paraproct ones, with a short inner branch near the apical end; proctiger baculi distinctly arcuate; vaginal plates short though wide at base, with acuminate apices; vagina more or less broadened anteriorly; bursa copulatrix short and narrow, acute at the apex; spermatheca, basally with a lateral protrusion to which attaches the gland, strongly bent at middle, and not narrowed towards blunt apex; spermathecal duct rather long, finely wavy, and entering into bursa copulatrix.

Figs. 45–48. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 45, *Leptura* (*Pedostrangalia*) *femoralis*; 46, *Leptura* (*Megaleptura*) *regalis*; 47, *Oedecnema dubia*; 48, *Eustrangalis distenioides*. (Scale: 0.5 mm.)



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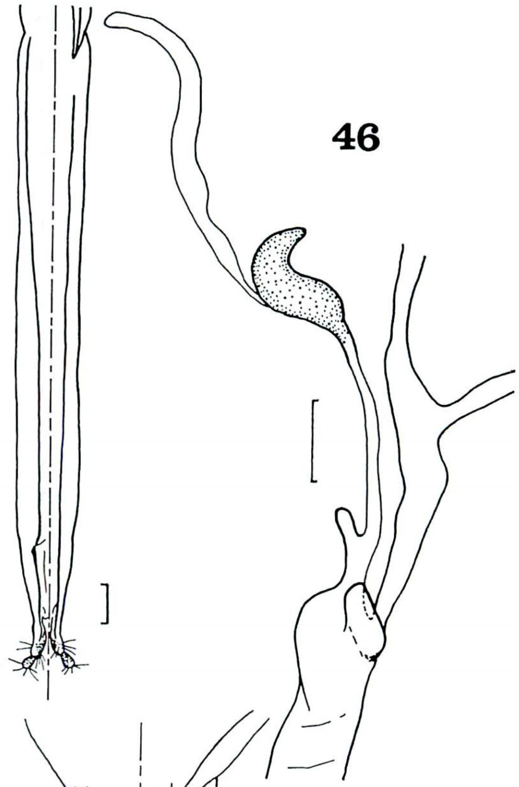

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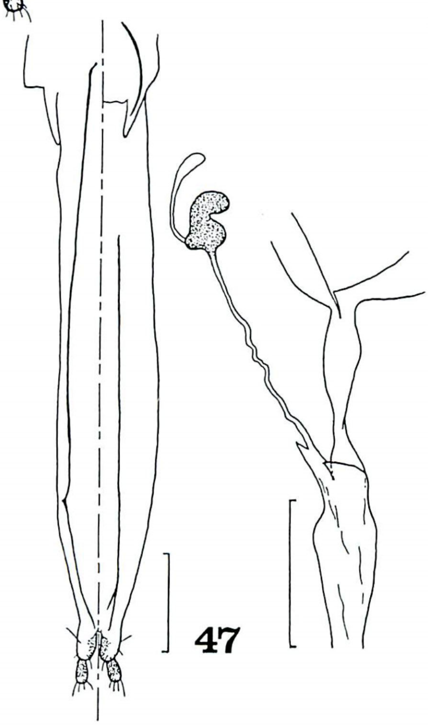

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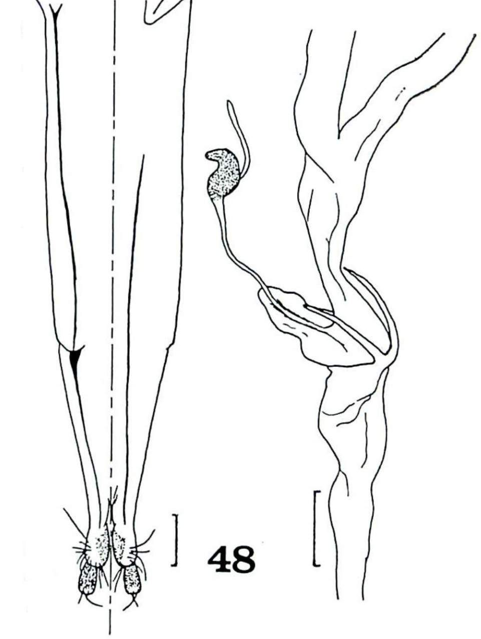


48

Eustrangalis distenioides BATES, 1884

(Fig. 48)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 7, fig. 15.

Collecting data of the material used. Mt. Daibosatsu, Yamanashi Pref., 18–V–1970, S. SAITO leg.; same locality, 28～29–V–1983, A. SAITO leg.

Paraproct of moderate length, each baculum rather thick and briefly forked at the anterior end; valvifer indistinct; coxite rapidly narrowed towards coxite lobes, which are rather long and bear many long tactile hairs, coxite baculi inwardly thickened at the anterior end and almost straight; stylus of moderate size, sclerotized except for apex, and bearing tactile hairs; dorsal baculi rather thick, slightly curved, and a little longer than the paraproct ones; proctiger baculi thin and almost straight; vaginal plates very narrow; bursa copulatrix short, with depressed anterior face; spermatheca without distinct constriction at base, with subovoid basal part, and abruptly bent at apical third; spermathecal duct thin and simple, joining bursa copulatrix at its apical portion, though continuing to the base of bursa copulatrix.

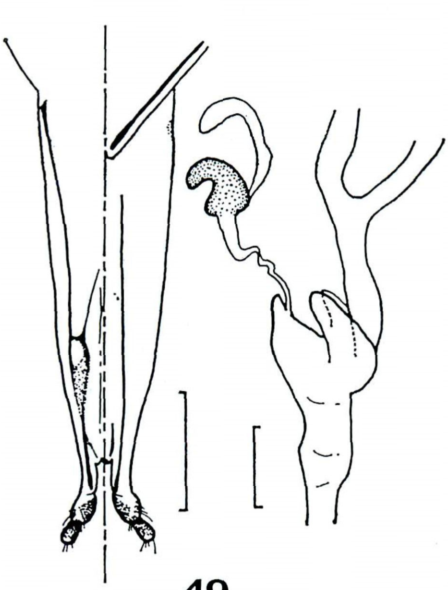
Japanostrangalia dentatipennis (PIC, 1901)

(Fig. 49)

Collecting data of the material used. Kohsawa, Katashina-mura, Gunma Pref., 26–VII–1979, A. TAKASU leg.

Paraproct very short, its baculi thickened at the anterior end; valvifer indistinct; coxite narrowed towards apical divided portion, each baculum longitudinally twofold at the base, forming a wide sclerotized part before middle, almost straight in apical half; coxite lobes narrow, sclerotized at each inner part, and bearing short tactile hairs; stylus small, sclerotized except for apex, and with short tactile hairs; dorsal baculi almost straight, longer than the paraproct ones, slightly thickened at the posterior end; proctiger baculi thick, very long, and straight; vaginal plates very broad, narrowed towards rounded apices; vagina somewhat broadened anteriorly; bursa copulatrix widely opening to vagina; spermatheca well constricted at base, narrowed towards middle, then abruptly bent, and blunt at the tip, with the gland attaching to the lateral face near base; spermathecal duct short, very thick posteriorly, wavy, and entering into the apical portion of bursa copulatrix.

Figs. 49–52. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 49, *Japanostrangalia dentatipennis*; 50, *Strangalomorpha tenuis aenescens*; 51, *Parastrangalis* (*Parastrangalis*) *lesnei*; 52, *Strangaliella shikokensis*. (Scale: 0.5 mm.)



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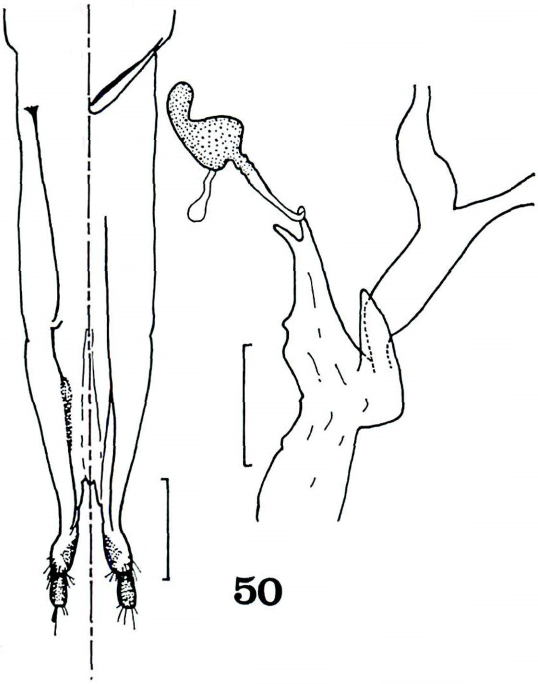

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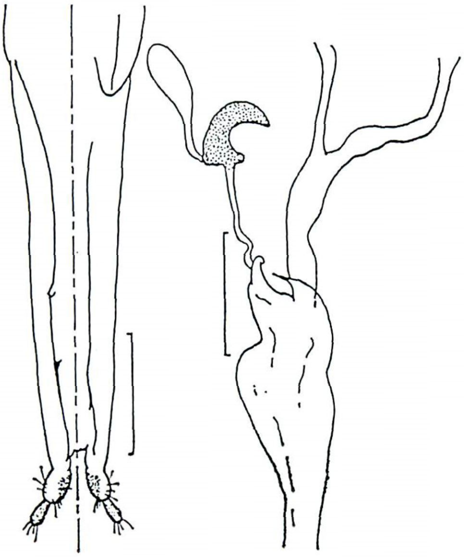

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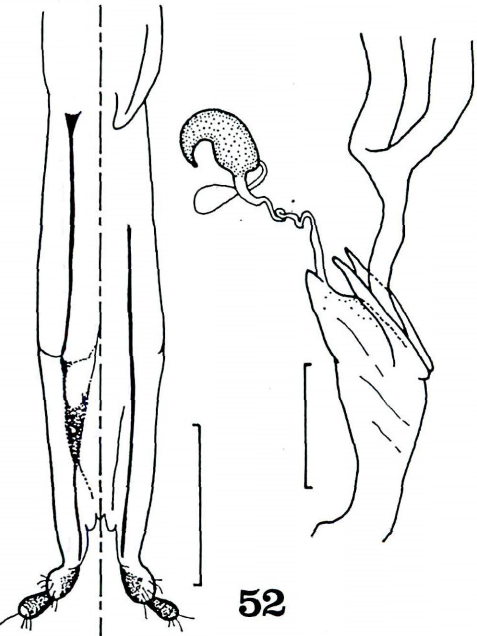


52

Strangalomorpha tenuis aenescens BATES, 1884

(Fig. 50)

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 23–VII–1978, A. TAKASU leg.; Sugenuma, Katashina-mura, Gunma Pref., 23–VII–1980, A. TAKASU leg.

Paraproct very short, its baculi thickened at the anterior end; valvifer indistinct; coxite narrowed posteriad, its baculi thickened at median third; coxite lobes rather long and narrow, weakly sclerotized at each inner part, with tactile hairs; stylus more or less long, sclerotized except for apex, and bearing tactile hairs; dorsal baculi thin, longer than the paraproct ones, and slightly curved, with vague longitudinal wrinkles inside; proctiger baculi rather thick, almost straight; vaginal plates broad and triangularly protruding at bases, and narrowed towards pointed apices; bursa copulatrix broad at base, widely connected with vagina, and with very narrow apical portion; spermatheca constricted several times at the base, broadest near the base, strongly narrowed towards apical third, and then slightly broadened again at the apical part, with the gland attaching to the lateral face of the subbasal broadest portion; spermathecal duct very short, coiled once near the end, and entering into the apical portion of bursa copulatrix.

Parastrangalis (*Parastrangalis*) *lesnei* (PIC, 1901)

(Fig. 51)

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 24–VII–1978, A. TAKASU leg.

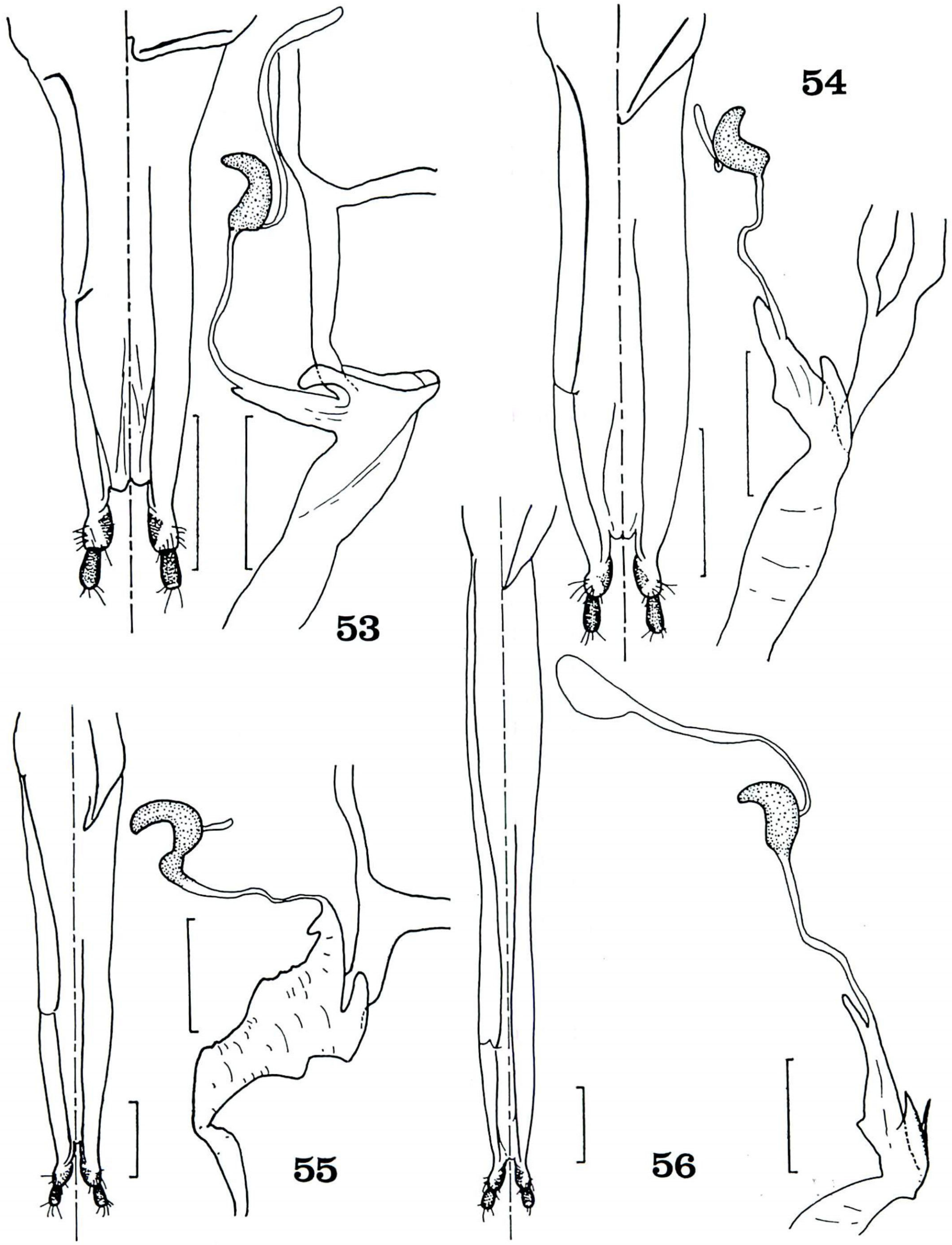
Paraproct of moderate length, its baculi thin and arcuate; valvifer indistinct; coxite slightly narrowed posteriad, each baculum somewhat thickened at middle and with a very short inner branch; coxite lobes sclerotized at each inner part, and bearing tactile hairs; stylus of moderate size, sclerotized except for apex, with tactile hairs; dorsal baculi thin and feebly sinuate; proctiger baculi almost straight; vaginal plates broad at the bases, narrowed towards acuminate apices; vagina dilated anteriorly; bursa copulatrix very short but widely open to vagina; spermatheca well constricted at the base, widest at the basal part, strongly curved, and gradually narrowed towards apex; spermathecal duct short, thick, perfectly coiled near the end and imperfectly so before that part, and entering into the apical part of bursa copulatrix.

Strangaliella shikokensis (MATSUSHITA, 1935)

(Fig. 52)

Collecting data of the material used. Mt. Tsurugi, Tokushima Pref., 1∼3–VIII–1979, T. SHIMOMURA leg.

Paraproct short, its baculi thick throughout and further thickened at the anterior



Figs. 53–56. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 53, *Strangaliella nymphula*; 54, *Idiostrangalia contracta*; 55, *Strangalia attenuata*; 56, *Mimostrangalia kurosonensis*. (Scale: 0.5 mm.)

ends, and almost straight; valvifer indistinct; coxite slightly narrowed posteriad, each baculum divided at the base, the short inner branch reaching the centre of coxite, the outer one sinuously extending to the apical divided portion and with subtriangular sclerotized part at middle; each coxite lobe well constricted at base, sclerotized at the inner part, and bearing short tactile hairs; stylus of moderate size, sclerotized except for apex, and bearing tactile hairs; dorsal baculi longer than the paraproct ones, thick and feebly curved; proctiger baculi almost straight; vaginal plates long and narrow, with subulate apical portions; vagina dilated anteriorly; bursa copulatrix short, broad at base, and widely connected to vagina; spermatheca broad in basal half, with strongly arcuate apical part which is acuminate; spermathecal duct short, coiled several times, and entering into the apical portion of bursa copulatrix.

Strangaliella nymphula (BATES, 1884)

(Fig. 53)

Collecting data of the material used. Mt. Daibosatsu, Yamanashi Pref., 5–VIII–1978, A. TAKASU leg.; Marunuma, Katashina-mura, Gunma Pref., 24–VII–1980, M. HARADA leg.

Paraproct very short, its baculi thin and laterally extending for a short distance in basal part; valvifer indistinct; coxite baculi thin and feebly sinuate, with a short inner branch at the anterior end, and with several vague longitudinal wrinkles inside; each coxite lobe rather broad, sclerotized at the inner part, and bearing short tactile hairs; stylus relatively long, sclerotized except for apex, and with tactile hairs; dorsal baculi, which are almost one and a half times as long as the paraproct ones, thin and almost straight, with vague longitudinal wrinkles inside; proctiger baculi almost straight; vaginal plates broad at the bases, narrowed towards middle, then broadened again and curved in apical portions; bursa copulatrix tubular; spermatheca fairly broad at the base, bent at the middle, and gently narrowed towards apex which is acuminate, with the gland attaching to the lateral face near base; spermathecal duct short, widely entering into the apical portion of bursa copulatrix.

Idiostrangalia contracta (BATES, 1884)

(Fig. 54)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 102, pl. 8, fig. 22 [*Strangalia*].

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 23–VII–1978, A. TAKASU leg.; Hirogawara, Ashiyasu-mura, Yamanashi Pref., 31–VII–1980, A. TAKASU leg.

Paraproct relatively short, each baculum curved outwards in the anterior portion and almost reaching the lateral margin; valvifer indistinct; coxite broad and narrowed towards apical lobes, its baculi thin and feebly sinuate; coxite lobes sclerotized at each inner part, and with tactile hairs; stylus moderately sclerotized, and with tactile hairs; dorsal baculi thin and slightly sinuate, almost as long as the paraproct ones; proctiger baculi straight; vaginal plates short, broad at each base, and narrowed towards apex; vagina more or less narrowed at the anterior end; bursa copulatrix relatively broad and narrowed towards blunt apex; spermatheca with protruding basal part, almost parallel-sided in basal half, bent at the middle, and narrowed towards blunt apex; spermathecal duct somewhat wavy, entering into the apical third of bursa copulatrix.

Strangalia attenuata (LINNÉ, 1758)

(Fig. 55)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 8, fig. 19.

Collecting data of the material used. Rikubetsu, Hokkaido, 22–VII–1980, T. SHIMOMURA leg.

Paraproct of moderate size, with feebly curved baculi; valvifer indistinct; coxite gradually narrowed posteriad, its baculi straight though feebly curved near the posterior end; coxite lobes weakly sclerotized at each inner part, and with tactile hairs; stylus sclerotized except for apex, and bearing tactile hairs; dorsal baculi almost straight, slightly shorter than the paraproct ones; proctiger baculi long and slightly curved; vaginal plates short, broad at each base, and gently narrowed towards rounded apex; vagina narrow though remarkably broadened anteriorly; bursa copulatrix broad at base, widely connected with vagina, and strongly bent in apical portion; spermatheca sigmoidally curved, without visible constriction at base, though lightly constricted at basal third, and somewhat broad at middle; spermathecal duct gently sinuate, and entering into bursa copulatrix at its apical part.

Note. In the three other Japanese species of the genus, *S. koyaensis* (MATSUSHITA), *S. takeuchii* MATSUSHITA et TAMANUKI and *S. gracilis* GRESSITT, the dorsal baculi are also short and the proctiger baculi are long. Perhaps these features can be regarded as being characteristic of *Strangalia.*

Mimostrangalia kurosonensis (OHBAYASHI, 1936)

(Fig. 56)

Collecting data of the material used. Kuroson, Kôchi Pref., 28–VII–1954, Y. SHUTO leg.

Paraproct extremely long, its baculi long and feebly sinuate; valvifer indistinct; coxite baculi feebly sinuate, each with a vague inner fold at its apical part; coxite lobes moderate in size, sclerotized at each inner part, and bearing tactile hairs; stylus sclerotized except for apex, and with tactile hairs; dorsal baculi very slightly sinuate, and much shorter than the paraproct ones; proctiger baculi almost straight; vaginal plates very short, broad at each base, and abruptly narrowed towards acuminate apex;

vagina bent at the anterior part; bursa copulatrix rather narrow, tubular; spermatheca weakly constricted at base, bent at middle, and narrowed towards apex; spermathecal duct lightly wavy, and entering into apical fourth of bursa copulatrix.

Tribe Eroschemini

Formosopyrrhona satoi (HAYASHI, 1957)

(Fig. 57)

Collecting data of the material used. Marubatake-rindô, Amami-Ohshima Is., Kagoshima Pref., 11–IV–1974, T. SHIMOMURA leg.

Paraproct very long with almost straight baculi; valvifer indistinct; coxite well narrowed towards the apical part, its baculi almost straight though feebly sinuate posteriorly, with a short inner branch at its apical part; each coxite lobe rather long, sclerotized at the inner part, and bearing tactile hairs; stylus rather long, with long tactile hairs; dorsal baculi slightly longer than the paraproct ones, and feebly sinuate near the apices; proctiger baculi almost straight; vaginal plates rather short and narrow; vagina bent and dilated anteriorly; bursa copulatrix small and narrow, tubular, joining spermathecal duct which is wavy and thickened at middle, and entering into vagina at the top of its dilated portion but continuing into it for some distance; spermatheca clearly distinguishable from the duct, not arcuate but short and almost parallel-sided throughout, weakly depressed at middle, and with the gland attaching to its top.

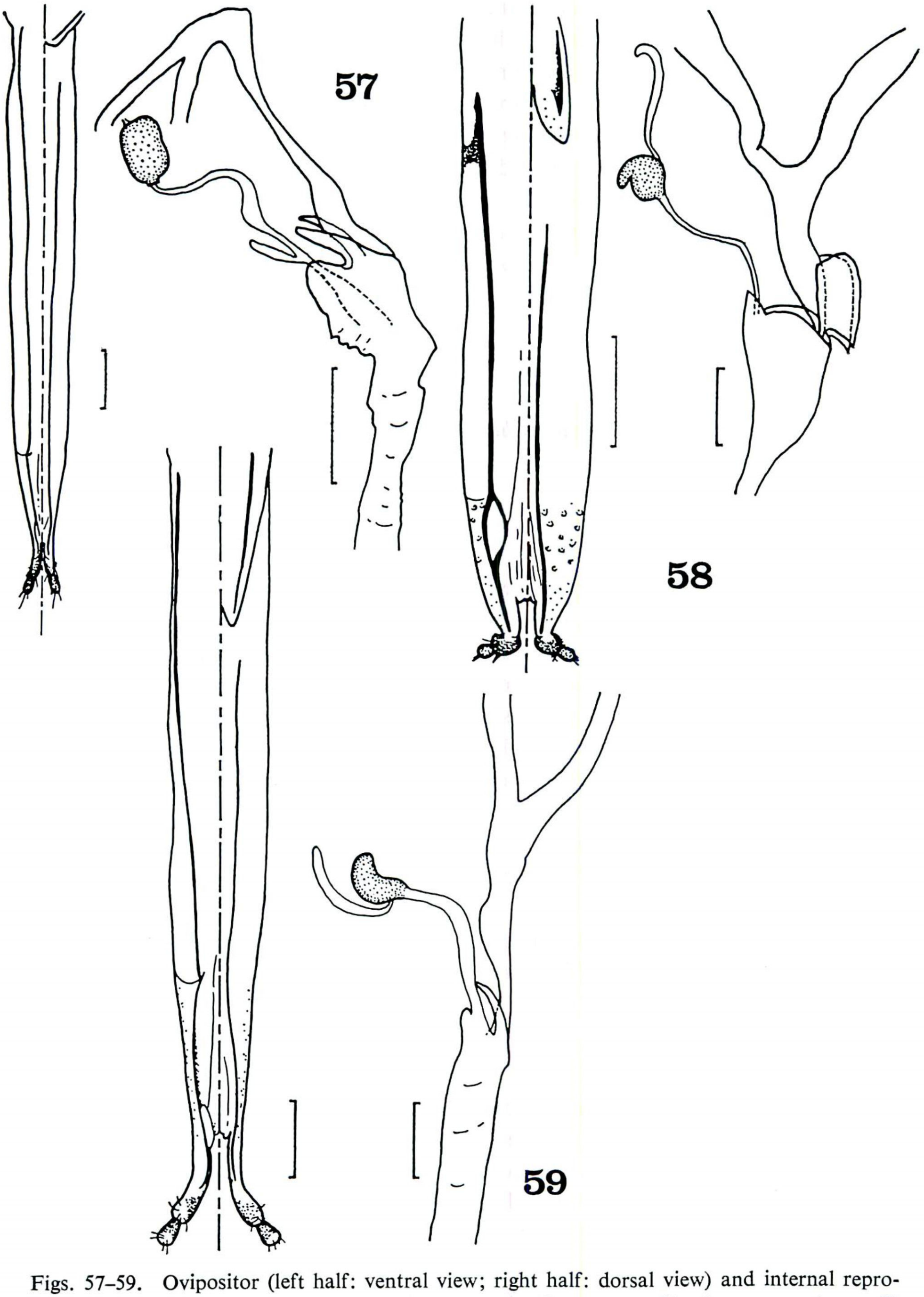
Corennys sericata BATES, 1884

(Fig. 58)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, pl. 8, fig. 24.

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 23–VII–1978, A. TAKASU leg.

Paraproct rather long, each baculum very thick, almost straight, and with a well sclerotized part expanding to lateral margin near its base; valvifer indistinct; coxite with rough surface, strongly constricted at the apical part, each baculum thick, divided at the base though the two branches meet again at the middle, and straightly extending to apical lobe; coxite lobes small, directed laterad, sclerotized except for bases, and with short tactile hairs; stylus very small, articulated to the apex of coxite lobe, and bearing short tactile hairs; dorsal baculi thick, almost as long as the paraproct ones, and slightly curved, with longitudinal wrinkles inside; proctiger baculi thick, thickened posteriorly, and sharply lanceolate at the end; vaginal plates very broad and subquadrate, each with very narrow base and sharply pointed outer basal angle, obliquely subtruncate at apex though the outer apical angle is rounded; vagina broadened anteriorly; bursa copulatrix existing only as a small protrusion, the apex of which is subacuminate; spermatheca subglobular, transversely folded near apex, with the gland attaching to



Figs. 57–59. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 57, *Formosopyrrhona satoi*; 58, *Corennys sericata*; 59, *Necydalis harmandi*. (Scale: 0.5 mm.)

the lateral face; spermathecal duct thin, entering into bursa copulatrix at its base.

Notes. It is of particular interest that the present species is very similar to *Pachypidonia bodemeyeri* (Fig. 29) in the features of the female reproductive organs, although these two species belong to different tribes. Their ovipositors are very peculiar among the Japanese lepturines in the following points: all the baculi are thick, the coxite has rough surface and is strongly constricted at the apical part, the coxite lobes are directed laterad and sclerotized except for the bases, and the stylus is very small.

So far as concerned with the female reproductive organs, there is nothing in common between this species and *Formosopyrrhona satoi*, both of which have been currently placed in the tribe Eroschemini.

Tribe Necydalini

Necydalis harmandi PIC, 1902

(Fig. 59)

Collecting data of the material used. Mt. Hotaka, Katashina-mura, Gunma Pref., 25–VII–1978, A. TAKASU leg.

Paraproct long, with slightly curved baculi; valvifer indistinct; coxite not clearly constricted at the apical part though somewhat narrowed posteriorly, with baculi slightly thickened at the median part and extending onto coxite lobes beyond the middle; each coxite lobe very narrow and externally arcuate, weakly sclerotized at the inner part, and with tactile hairs; stylus rather short though broadened at the apex, weakly sclerotized, and bearing tactile hairs; dorsal baculi feebly sinuate, and slightly longer than the paraproct ones; proctiger baculi very long and almost straight; vaginal plates narrow and more or less curved; vagina narrow, almost parallel-sided; bursa copulatrix rudimentary; spermatheca weakly constricted at base, gently curved at middle, and with broad apical part; spermathecal duct very thick, and entering into vagina.

Note. The bursa copulatrix is also rudimentary in the other species of the genus, *N. gigantea gigantea* KANO and *N. solida* BATES.

Discussion

It seems appropriate to examine taxonomic importance of the female reproductive organs of lepturine cerambycid beetles according to their different components.

First to be considered is the ovipositor which is roughly distinguished into the paraproct, valvifer, coxite and styli. The paraproct with its baculi is usually simple, but still shows peculiarities in certain genera. It is especially long in the three Japanese species of *Corymbia*, *Konoa granulata*, *Leptura* (*Megaleptura*) *regalis*, *Mimostrangalia kurosonensis*, and *Formosopyrrhona satoi*. All but the last one of them belong to the Lepturini, while the last-named is currently placed in the Eroschemini. As was already

Table 1. Diagnostic features of female reproductive organs in Japanese lepturine cerambycid beetles.

Tribe	Species name	Paraproct	Valvifer	Bursa copulatrix	Stylus	Remarks
Xylosteini	*Caraphia lepturoides*	short	distinct	absent		
Encyclopini	*Encyclops olivacea*	short	indistinct	middle		
Rhagiini	*Rhagium japonicum*	rather long	indistinct	large		
	Enoploderes bicolor	short	indistinct	absent		
Stenocorini	*Sachalinobia rugipennis koltzei*	long	indistinct	large		dorsal baculi short
	Stenocorus coeruleipennis	long	indistinct	large		dorsal baculi short
	Toxotinus reini	very short	indistinct	large		baculi absent except for proctiger ones
	Pachyta lamed	rather long	indistinct	large		dorsal baculi short
	Brachyta punctata	short	imperfectly separated	large	abaxially articulated	spermatheca unevenly sclerotized; proctiger very long
	B. bifasciata japonica	short	imperfectly separated	large	abaxially articulated	spermatheca unevenly sclerotized; proctiger very long
	Evodinus borealis	short	distinct	large	abaxially articulated	proctiger very long
	Gaurotes (*Paragaurotes*) *doris*	very short	indistinct	very large		spermatheca narrow
	G. (*Carillia*) *atripennis*	short	indistinct	large		vaginal plates sclerotized at bases; spermatheca narrow
	Lemura nishimurai	very short	indistinct	large		spermatheca U-shaped
	L. decipiens	very short	indistinct	large		spermatheca U-shaped
	L. rufithorax	very short	indistinct	large		spermatheca U-shaped
	Dinoptera minuta	very short	indistinct	large		vaginal plates sclerotized at bases; spermatheca narrow
	Acmaeops septentrionis	short	indistinct	large		vaginal plates sclerotized throughout; spermatheca narrow
	Macropidonia (*Macropidonia*) *ruficollis*	short	indistinct	middle		
	M. (*Pseudosieversia*) *japonica japonica*	short	indistinct	small		
	Pidonia (*Pidonia*) spp.	moderate	indistinct	small	abaxially articulated	

Table 1. Continued.

Tribe	Species name	Paraproct	Valvifer	Bursa copulatrix	Stylus	Remarks
Stenocorini	*P.* (*Cryptopidonia*) spp.	very short	indistinct	small		
	P. (*Mumon*) spp.	short	indistinct	small		dorsal baculi short
	P. (*Omphalodera*) spp.	short	indistinct	small		
Lepturini	*Grammoptera chalybeella*	moderate	indistinct	small	abaxially articulated	vaginal plates sclerotized and V-shaped
	Alosterna tabacicolor	moderate	indistinct	small	abaxially articulated	vaginal plates sclerotized and V-shaped
	Ohbayashia nigromarginata nigromarginata	moderate	indistinct	small		
	Pyrrhona laeticolor laeticolor	rather long	indistinct	small		
	Pachypidonia bodemeyeri	moderate	indistinct	small	very small	coxite well constricted
	Nivellia sanguinosa	moderate	indistinct	small		
	Judolia japonica	rather long	indistinct	indefinite		vaginal plates sclerotized along the outer margins
	J. cometes	rather short	indistinct	absent		
	J. sexmaculata		indistinct	indefinite		
	Judolidia bangi	short	indistinct	indefinite		vagina weakly sclerotized
	Pseudallosterna misella	moderate	indistinct	small	abaxially articulated	vaginal plates sclerotized and V-shaped; proctiger long
	Kanekoa azumensis	rather short	indistinct	small		
	Anoploderomorpha monticola	moderate	indistinct	small		vaginal plates sclerotized at bases
	Brachyleptura pyrrha	long	indistinct	small		
	Anastrangalia scotodes scotodes	rather long	indistinct	small		vagina lightly sclerotized
	Corymbia succedanea	very long	indistinct	small		vagina sclerotized
	C. variicornis	very long	indistinct	small		
	C. igai	very long	indistinct	small		
	Konoa granulata	exceedingly long	indistinct	small	abaxially articulated	
	Leptura (*Leptura*) *mimica*	moderate	indistinct	small		
	L. (*L.*) *dimorpha*	moderate	indistinct	small		

	L. (*L.*) *subtilis*	moderate	indistinct	small		
	L. (*L.*) *yakushimana*	fairly long	indistinct	small		
	L. (*L.*) *ochraceofasciata* subspp.	fairly long	indistinct	small		spermathecal duct extremely long; vagina weakly sclerotized
	L. (*L.*) *kusamai*	fairly long	indistinct	small		spermathecal duct extremely long
	L. (*L.*) *duodecimguttata duodecimguttata*	fairly long	indistinct	small		
	L. (*L.*) *latipennis*	very long	indistinct	small		
	L. (*Nakanea*) *vicaria vicaria*	long	indistinct	small		
	L. (*Pedostrangalia*) *variicornis*	rather long	indistinct	small		
	L. (*P.*) *femoralis*	moderate	indistinct	small		vaginal plates weakly sclerotized throughout
	L. (*Megaleptura*) *regalis*	very long	indistinct	small		
	Oedecnema dubia	long	indistinct	small		
	Eustrangalis distenioides	moderate	indistinct	small		
	Japanostrangalia dentatipennis	very short	indistinct	small		
	Strangalomorpha tenuis aenescens	very short	indistinct	small		
	Parastrangalis (*Parastrangalis*) *lesnei*	moderate	indistinct	small		
	Strangaliella shikokensis	short	indistinct	small		
	S. nymphula	very short	indistinct	small		
	Idiostrangalia contracta	short	indistinct	small		
	Strangalia attenuata	moderate	indistinct	small		dorsal baculi short; proctiger baculi long
	S. koyaensis					
	S. takeuchii					
	S. gracilis					
	Mimostrangalia kurosonensis	extremely long	indistinct	small		
Eroschemini	*Formosopyrrhona satoi*	very long	indistinct	small		
	Corennys sericata	rather long	indistinct	small	very small	coxite well constricted
Necydalini	*Necydalis harmandi*	long	indistinct	rudimentary		proctiger long
	N. solida	long	indistinct	rudimentary		
	N. gigantea gigantea	long	indistinct	rudimentary		

pointed out in the "Notes" following the description of *Corennys sericata*, the two Japanese species of the Eroschemini have markedly different female genitalia. It is quite possible that they belong to two different tribes, and that *Formosopyrrhona* may have a closer affinity to the Lepturini. In *Sachalinobia rugipennis koltzei*, *Stenocorus coeruleipennis* and *Pachyta lamed*, all belonging to the Stenocorini, the paraproct is fairly long but has short dorsal baculi. In other stenocorine genera, the paraproct is short or very short, and in *Toxotinus reini*, it is very short, broad and devoid of baculi, a strange condition never found in all the other lepturine cerambycids. Short paraproct with short dorsal baculi is also found in the subgenus *Mumon* of the genus *Pidonia*. In the subgenus *Leptura*, the paraproct considerably varies in length according to species or species-groups. However, length of the paraproct is correlated with length of the ovipositor, which seems to be concerned with egg-laying habits. The valvifer is distinct only in the two species, *Caraphia lepturoides* and *Evodinus borealis*, the former belonging to the Xylosteini and the latter to the Stenocorini. In *Brachyta punctata* (Stenocorini), it is imperfectly separated from the coxite. *Brachyta* is also peculiar in possessing very long proctiger baculi, straight inner edges of coxite lobes, and unevenly sclerotized spermatheca. In all the other lepturines studied, the valvifer is not defined. The presence or absence of defined valvifer may be regarded as an indication of phylogenetic difference, but on the other hand, it may have been derived secondarily.

The two species, *Pachypidonia bodemeyeri* and *Corennys sericata*, are peculiar in the fact that the coxite is strongly constricted at the apical part, roughened on the surface, and laterally directed at the terminal lobes, which are surmounted with very small styli. They also have other characters in common, and as a whole, have very similar ovipositors. Such a similarity as this cannot be considered to have resulted from a mere convergence, though they have been currently placed in two different tribes, Lepturini and Eroschemini, respectively.

Each stylus is abaxially articulated to the coxite lobe in *Brachyta* spp., *Evodinus borealis*, *Pidonia* (*Pidonia*) spp., *Grammoptera chalybeella*, *Alosterna tabacicolor*, *Pseudallosterna misella* and *Konoa granulata*. In all the others, it is almost adaxially articulated to the coxite lobe. The dorsal baculi are absent in only one species, *Toxotinus reini*. The proctiger is very long in the two species of *Brachyta*, *Evodinus borealis*, *Pseudallosterna misella* and *Necydalis harmandi*. These peculiarities are useful for reinforcing current classification at the generic or lower levels, and with a few exceptions, accord well with the latter.

The vaginal plates are much diversified in development and configuration. They are usually thin and hyaline, but poorly sclerotized in such stenocorines as *Gaurotes* (*Carillia*) *atripennis*, *Dinoptera minuta* and *Acmaeops septentrionis*, and such lepturines as *Judolia japonica*, *Anoploderomorpha monticola* and *Leptura* (*Pedostrangalia*) *femoralis*, and strongly sclerotized in *Grammoptera chalybeella*, *Alosterna tabacicolor* and *Pseudallosterna misella*, all of which belong to the Lepturini. In the latter three, the two plates are fused to each other at the base and form a V-shaped plate. It is difficult to find out phylogenetic meaning in the variation of the vaginal plates, but they are very useful for discriminating species of the Lepturinae.

The vagina is rather a simple muscular tube, varying in length and proximal dilatation according to species. In certain lepturines, it is partly sclerotized, that is, in *Judolia bangi*, a small portion near the attachment of the vaginal plates is poorly sclerotized, and in *Anastranglia scotodes*, *Corymbia succedanea* and *Leptura* (*Leptura*) *ochraceofasciata ochraceofasciata*, it is sclerotized behind the bursa copulatrix. However, these features does not seem to have any phylogenetic meaning, but may have resulted from parallel specialization.

Generally speaking, the bursa copulatrix is well developed in such lower tribes as the Encyclopini, Rhagiini and Stenocorini, and is either small or absent in such higher tribes as the Lepturini, Eroschemini and Necydalini. In such lepturines as *Grammoptera chalybeella* and *Alosterna tabacicolor*, it is not only small but indistinguishable from the spermathecal duct. The bursa copulatrix is useful for grouping tribes or genera. However, exceptions occur rather frequently. In the Stenocorini, *Macropidonia* (*Pseudosieversia*) *japonica japonica* and all the species belonging to the genus *Pidonia* have small bursa copulatrix. More unexpected is that it is completely absent in *Caraphia lepturoides* and *Enoploderes bicolor*, which belong to the lower tribes Xylosteini and Rhagiini, respectively. At least, *Rhagium* and *Enoploderes* may not belong to the same tribe.

As has been known for some time, the spermatheca furnishes a useful character for classifying species and/or subgenera of lepturine cerambycids. A well known example is the genus *Pidonia*, in which subgeneric classsification is largely based upon difference of spermathecal conformation. It is also useful for classifying species and species-groups of this difficult genus. However, the spermathecal capsule varies to some extent in shape both individually and geographically, so that it is necessary to examine as many specimens as possible for determining its value in the taxonomy of lepturine species.

Thus, the female reproductive organs are important and useful for the taxonomy of the Lepturinae, though they have been almost always neglected by previous workers. The spermatheca furnishes specific and/or subgeneric characters, the ovipositor provides subgeneric or generic ones, and the bursa copulatrix can be used for classifying genera or tribes. Since the present study is limited to Japanese forms, no action is taken for revising current classification of genera and tribes according to the result obtained. However, it seems obvious to me that certain important changes will be needed for the classification of the Lepturinae when more comprehensive investigations are made in the future. It is to be hoped that investigations similar to the present study will be made throughout the family and will establish the higher classification of cerambycid beetles on a sound basis.

要　約

斉藤明子：日本産ハナカミキリ亜科の雌交尾器とその分類学的重要性．―― カミキリムシ科甲虫類の分類は，観察の容易な外部形態の比較に基づいて行われていたが，ようやく最近になって，雄交尾器を用いた種の認識が重視されるようになってきた．しかし，雌交尾器に関する報告はきわめて少なく，わずかに形態学的な少数の報文と，フトカミキリ亜科の分類学的な検討に関する中国での研究などがあるにすぎない．そこで筆者は，日本産のハナカミキリ亜科44属に含まれる57種について，雌交尾器を記載，図示し，一部の種についてはそれ以外の近縁種についても検討して，雌交尾器の各形質が分類学的にどのような重要性をもつかを調べた．

その結果，産卵管 (paraproct, valvifer, coxite, stylus, proctiger, dorsal baculum) の形態は属あるいは亜属段階の分類に，また交尾嚢 (bursa copulatrix) は族や属段階の分類に有効な形質であるらしい，ということがわかった．一方，受精嚢 (spermatheca) は，その付属腺 (spermathecal gland) や受精嚢管 (spermathecal duct) とともに，さらに低い段階，つまり亜属や種の段階での分類に際して重要な形質になる．雌交尾器の検討結果から想定される分類体系は，外部形態のみに基づく分類体系と大筋で一致するが，なかには大きく相違するものもみつかった．このような事例については記載のあとに注記したが，その分類学的な取扱いについては将来のより広汎な研究に残した．

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Elytra, *Tokyo*, **17** (2): 234, November 15, 1989

コガネムシが昆虫全体の代表になるか？

最近，偶然の機会に，ハチ類に関する論文のなかで，だれにもよく知られている Hymenoptera (ハチ目あるいは膜翅目)，Symphyta (ハバチ亜目あるいは広腰亜目)，Apocrita (ハチ亜目あるいは細腰亜目) などの名称が消えて，それぞれ Vespida, Siricina, Vespina という名で置き換えられていることに気がついた．この驚くべき改変を行なったのはいったいなに者だろうか，とその由来を追跡した結果，置換名に関する提案が発表されたのは 1977 年で，その提案者は，ニクバエ類などハエ目昆虫の大家であり，化石種の研究にも大きい足跡を残した B. B. ROHDENDORF (1904–1977) であることがわかった．しかも ROHDENDORF の提案には，動物全部の上位分類名を統一する見本として，全昆虫類の目以上の分類群に対する統一名の一覧表がつけられていた．

提案がなされてからすでに 10 年以上の歳月を経過し，いささか旧聞に属する嫌いはあるが，ROHDENDORF の論文の掲載されたのが，われわれの目には触れにくい古生物学の専門誌であったことと，昨年 (1988 年) になってその方式に従う研究者が出てきたという事情とを考慮して，甲虫類に焦点をしぼった論旨をここに紹介しておきたい．

ROHDENDORF の論文の主旨は，現行の国際動物命名規約の適用を受けない下目以上の分類単位についても，科や属の場合と同じように，基準属の名称に基づく分類名を与えて，全体を統一しようという点にある．そこで，下目，亜目，目，上目，群，下綱，亜綱，綱，上綱，亜門，門，上門を，それぞれ -omorpha, -ina, -ida, -idea, -iformes, -ones, -ona, -oda, -odea, -ozoina, -ozoa, -ozoidea の語尾で統一した名称にしてはどうか，という提案がなされている．また，なにを基準属に決めるかという問題については，科群の命名に関する規約に倣い，語尾を修正することによって適格となりうるもっとも古い名称に，先取権を与えようとしている．

この意見を甲虫類に当てはめると次のようになる (括弧内は現在もっとも広く用いられている名称)．昆虫綱 Scarabaeoda (=Insecta)，有翅昆虫亜綱 Scarabaeona (=Pterygota)，新翅下綱 [の一部] Scarabaeones (=Neoptera)，貧新翅群 Scarabaeiformes (=Oligoneoptera)，甲虫上目 Scarabaeidea (=Coleopteroidea)，コウチュウ目 Scarabaeida (=Coleoptera)．また，この提案には例示されていないが，コガネムシ科の属するカブトムシ亜目は，Scarabaeina (=Polyphaga) となるはずである．

このように，*Scarabaeus* に基づく上位分類名が昆虫綱自体にまで及ぶ理由は，科以上の適格名を初めて提唱したのが，オーストリアの昆虫学者 J. N. LAICHARTING であったかららしい．ROHDENDORF の提案は，一見，荒唐無稽のように思えるが，鳥類や魚類では，これと同じ考え方に基づく目名の統一がすでに実施され定着している．したがって，昆虫類についても，ROHDENDORF によって提唱された上位分類名の用いられる日がこないともかぎらない．その時には，昆虫全体を表わす名称が，コガネムシで代表されることになるわけである．

因みに，ROHDENDORF の論文は，統一名の一覧表を除く全文の英訳が，RASNITSYN (1982) によって国際動物命名委員会に紹介され，考慮を要請されている (提訴の手続きにはなっていない)．

なお，この紹介記事に関する文献は，下記のとおりである．

RASNITSYN, A. P., 1982. Proposal to regulate the names of taxa above the family group. *Bull. zool. Nom.*, **39**: 200–207.

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(上野俊一)

Elytra, Tokyo, 17 (2): 235–238, November 15, 1989

A New Species of the Genus *Ulorhinus* (Coleoptera, Anthribidae) from the Islands of Tsushima, Japan

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Abstract A new anthribid beetle belonging to the genus *Ulorhinus* SHARP is described from the Islands of Tsushima, Japan, under the name of *U. akitai*. It is closely related to *U. gokani* MORIMOTO, 1981, from Gunma Prefecture, Central Japan.

Some interesting Japanese anthribid beetles have been submitted to me for taxonomic study through the courtesy of Mr. Katsumi AKITA in Mie Prefecture. They contained a strange species belonging to the genus *Ulorhinus* SHARP, 1891. It was collected in the Islands of Tsushima, and related to *U. gokani* MORIMOTO, 1981, described from Gunma Prefecture, central Honshu. After a careful examination, it proves to be new to science, and will be described in the present paper.

Before going further, I wish to express my sincere gratitude to the late Prof. H. SAWADA and Prof. Y. WATANABE of the Laboratory of Entomology, Tokyo University of Agriculture, and to Prof. K. MORIMOTO of the Entomological Laboratory, Kyushu University, Fukuoka, for their constant guidance and encouragement. I am much indebted to Dr. S.-I. UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kind reading the original manuscript of the present paper, and to Mr. K. AKITA for his kindness in providing me with the specimen used in this study, and to Mr. A. YOSHITANI for his assistance in drawing the text-figure.

Ulorhinus akitai SENOH, sp. nov.

[Japanese name: Tsushima-oomenaga-higenagazoumushi]

(Fig. 1)

Length: 7.4 mm (from apical margin of pronotum to apices of elytra).

Male. Colour black; antennal segment 1st and 2nd, each apical part of 3rd to 8th segments, mouth parts except for mandibles, and claws blackish brown. Pubescence dense, black and dark gray; black and dark gray hairs on elytra forming tessellated small patches.

Head coarsely sculptured and finely pubescent; eyes very large, strongly convex above, and strongly expanded latero-posteriorly; the shortest distance between eyes about one-third the maximum width of rostrum; interocular parts densely, deeply and reticulately punctate, the interstices between punctures distinctly narrower than

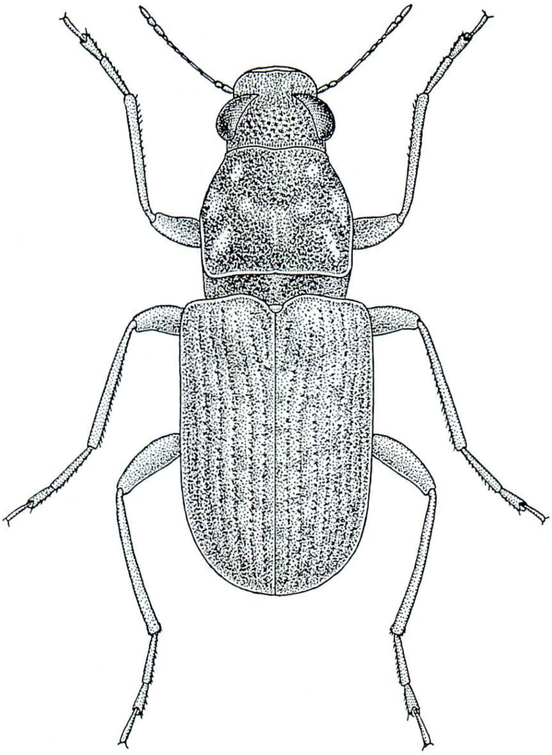

Fig. 1. *Ulorhinus akitai* SENOH, sp. nov., from the Islands of Tsushima.

the diameter; rostrum transverse, about two-thirds as long as wide, almost flat, slightly narrowing in apical half, anterior margin weakly incurved at middle; surface densely punctate, the punctures smaller in apical one-third; mandibles covered with rather fine hairs in basal two-thirds. Antennae slender, reaching the middle of pronotal side margins, basal two segments thick, 1st a little longer than 2nd, proportions in length from 2nd to 11th about 4.0 : 6.0 : 6.0 : 4.5 : 4.0 : 4.0 : 2.5 : 7.0 : 3.0 : 5.5, 9th elongate-triangular, about 2.3 times as long as wide, 10th nearly quadrate, 11th oval, about 2.0 times as long as wide.

Pronotum almost hexagonal, a little wider than long, widest at a little behind the middle, the widest part of pronotum 1.23 times as wide as the distance from dorsal transverse carina to apical margin of pronotum; surface uneven, weakly depressed before the middle, weakly convex above behind the middle, densely punctate, the punctures being round, distinctly smaller than those on the interocular parts; dorsal transverse carina almost straight, and roundly connected with each lateral carina, the latter declivous, extending to the apical third of side margin; carinula absent. Scutellum round. Elytra oblong, about 1.5 times as long as wide, nearly parallel-sided in basal four-fifths, then strongly narrowed posteriorly; basal margin of each elytron somewhat expanded over the base of pronotum, depressed, and with a convexity at one-third from suture; strial punctures relatively large, deep, their diameter distinctly smaller than the widths of intervals, the intervals somewhat elevated, the third one more strongly elevated and the widest, subbasal swellings weak, subapical swellings obsolete. Pygidium tongue-shaped, somewhat inclined forwards, nearly as long as wide; lateral margins reflexed, sharply carinate and shiny, gradually convergent towards widely rounded apex; surface covered with small punctures, their diameter a little larger than the widths of interstices between punctures in basal one-third, about as large as or smaller in apical two-thirds, and sparsely covered with fine hairs; disc roundly convex above in apical two-thirds.

Prosternum densely covered with small and deep punctures; mesosternal process transverse, subrectangular, apical parts of lateral sides strongly expanded laterad; metasternum covered with punctures as on pro- and mesosterna, except for median parts whose punctures are small, and with a longitudinal median narrow sulcus in apical third, and with deep entire post-coxal sulcus. Sternites densely covered with small punctures, the punctures distinctly smaller than those on prosternum, and rather sparsely covered with fine hairs; viewed laterally, 1st and 2nd visible sternites conjointly almost horizontal, 3rd to 5th sternites distinctly slanting. Legs relatively long; anterior femur a little shorter than the median which is distinctly shorter than the posterior; median tibia nearly as long as the posterior which is longer than the anterior; 1st segment of median tarsus nearly as long as the posterior which is a little longer than the anterior; claws toothed.

Female. Unknown.

Holotype: ♂, Nishi-tatera Forestry Road (200 m alt.), Izuhara, Tsushima, Japan, 23–VII–1988, K. AKITA leg. The holotype is preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Distribution. Japan (Tsushima Is.).

Notes. In general appearance, this species resembles *U. gokani* MORIMOTO, 1981, known from central Honshu, but can be distinguished from the latter by the following characteristics: body colour black; hairs black and dark gray; pronotum weakly depressed before the middle, densely punctate, dorsal transverse carina almost straight; expanded basal parts of elytra depressed, and so on.

The specific name of this new anthribid is given in honour of Mr. Katsumi AKITA who offered the valuable specimen for my study.

要約

妹尾俊男: 対馬から発見された *Ulorhinus* 属の 1 新種. —— 対馬から得られた *Ulorhinus* 属に属するヒゲナガゾウムシの 1 新種を, *Ulorhinus akitai* SENOH（和名新称: ツシマオオメナガヒゲナガゾウムシ）と命名し, 記載した. 本種は, 最近, 群馬県霧積から記載された *U. gokani* MORIMOTO, 1981 に一見よく似ているが, 体色は黒色, 前胸背板は中央前が押し下げられ, 点刻は密, 横隆線は直線的, 上翅基部の前胸背板基部上におおいかぶさっている部分は扁平, などの形態的特徴により, 容易に識

別することができる．

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Elytra, *Tokyo*, **17** (2): 238, November 15, 1989

新刊紹介

Fauna d'Italia: Coleoptera, Staphylinidae, Omaliinae. By Adriano ZANETTI. XII+472 pp., 1987. Edizioni Calderini, Bologna. L 46,000.00

Fauna d'Italiaの第25巻として，1987年にハネカクシ科のOmaliinae (ヨツメハネカクシ亜科) が発行された．この書はDr. Adriana ZANETTIによるもので，このシリーズ中ハネカクシ科としては，Dr. Arnaldo BORDONIによって1982年にとりまとめられたXantholininae (ナガハネカクシ亜科) に次ぐものである．

内容の項目だては，今回のOmaliinaeもXantholininaeの場合とほぼ同様で，本亜科の形態，行動，生態，生物地理および化石種などのそれぞれについての概説であり，そのあとにイタリーに分布している本亜科36属をモノグラフとしてとりまとめている．Xantholininaeの場合と大きく異なっているのは，今回の場合はモノグラフ中の検索表がイタリー語とともに英語が併記されている点で，イタリー語にはなじみの薄い日本人にとってはたいへん有難いことである．

イタリー産36属中には，4属を除いた日本産の大部分の属が含まれ，主要な属には代表種の全形図が掲げられている．また，それぞれの種については，同物異名，記載および分布地などが付されていると同時に雄交尾器が図示され，現在ハネカクシの研究に従事しているものばかりでなく，これからハネカクシを研究しようとする人にとっても，たいへんに便利かつ有益な文献である．

(渡辺泰明)

Elytra, *Tokyo*, 17 (2): 239–242, November 15, 1989

ホソクロコメツキの形態について

大平仁夫

Notes on the Morphological Structure of *Ampedus* (*Ampedus*) *tenuistriatus* (Coleoptera, Elateridae) from Japan

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National Institute for Physiological Sciences,
Okazaki, 444 Japan

Abstract *Ampedus* (*Ampedus*) *tenuistriatus* Lewis, 1894, was originally described from Kiga, Miyanoshita, Chuzenji, Nikko and Yuyama under the generic name of *Elater*. In the present study, the author has examined some important structures of this species by SEM-images as shown in Figs. 1–2 to facilitate its recognition.

本種は体長 10 mm 内外の黒色をした細長い種で，現在では本州，四国，九州の各地に広く分布することが記録されている．本種の実体についてはすでに大平 (1974) に示したように，G. Lewis (1894) が箱根 (木賀，宮ノ下) や日光 (中禅寺)，それに熊本県 (湯山) などから採集した標本にもとづいて，自身が新種として記載したものである．しかし，その後の研究の進展により，日本の各地には本種の近似種が少なくとも数種は分布していることが判明しているので，原記載以降における分布記録についても再検討が必要になってきている．そこで，本種の実体をより詳しくここに報告することにした．

成虫の形態

雄．体長は 8〜10 mm 内外．原記載では 10〜11 mm になっているが，筆者が調査した日光産の総基準標本では体長 7.5 mm であった．実際，各地からの標本を検した限りでは，体長が 10 mm を越す個体はまれである．体は細長くてやや扁平状，黒色で光沢を有し，背面は暗褐色毛を生じ，頭部と前胸背板上にはやや長い毛を生ずる．触角は黒色〜黒褐色 (第 2, 3 節はやや暗褐色) で，肢は黒褐色 (脛節は暗褐色〜褐色，付節は通常褐色) である．

頭部の前頭横隆線の前縁中央部は弱く抑圧され，頭盾との境はやや不明瞭である (Fig. 1 D)．小顎肢の末端節は細長い三角形である (Fig. 1 H)．触角は細長く，末端は前胸背板の後角より末端 1 節ほど後方へ伸長する．第 2 節は短小で幅よりやや長く，第 3 節は弱い三角形，第 4 節はやや鋸状で，第 3 節の約 1.6 倍の長さである．また，これら第 2，3 節を合わせたものは第 4 節とほぼ等長である (Fig. 1 E–F)．

前胸背板は梯形でやや扁平．背面からみた両側は，中央やや後方部においてもっとも幅広く，それより前方に顕著に幅せまくなり，それより後方は後角末端に向かって弱く内方へ湾曲する (Fig. 2 D,

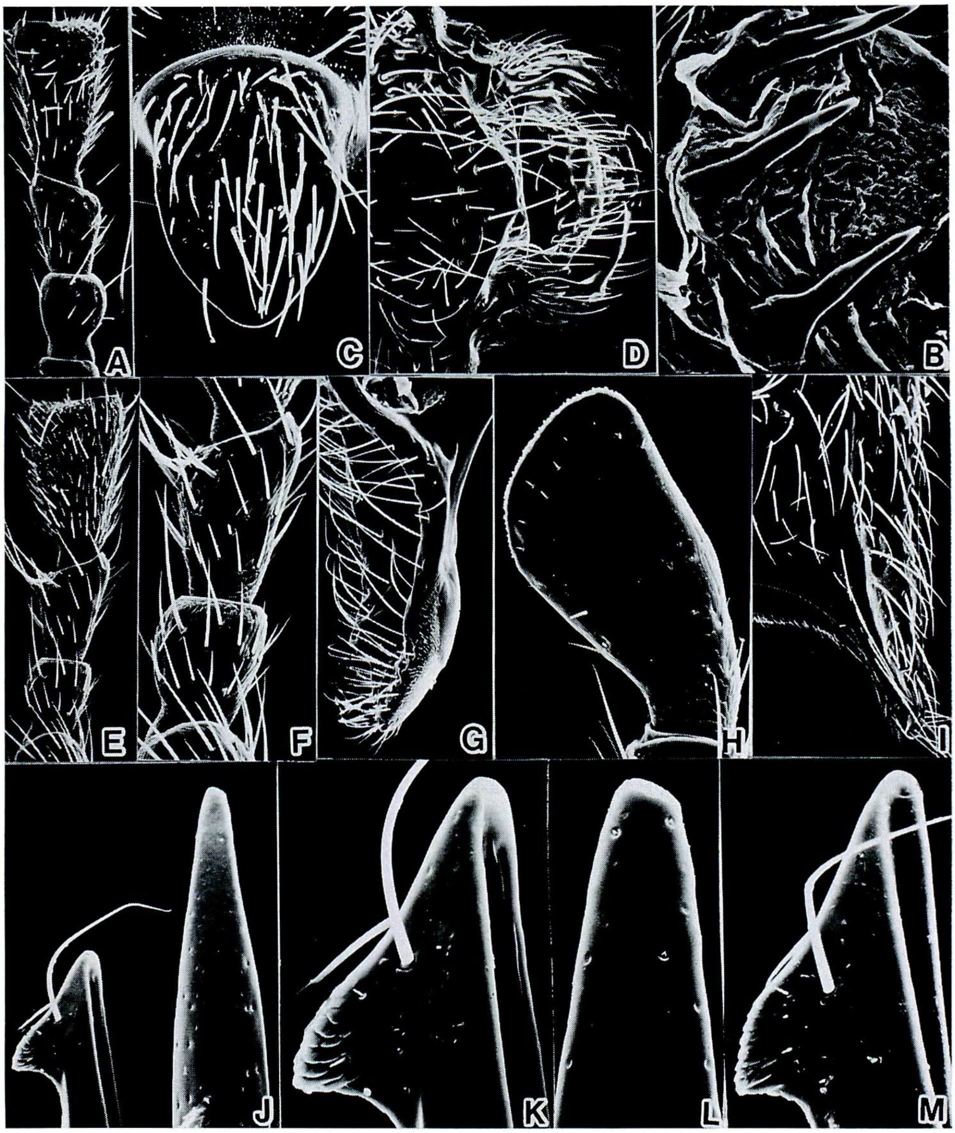

Fig. 1. *Ampedus* (*Ampedus*) *tenuistriatus*, male (except for A and B which are females), Mt. Hakusan in Gifu-ken. —— A, Second to 4th segments of antenna; B, some spine-like setae in bursa copulatrix; C, scutellum; D, clypeal margin; E, 2nd to 4th segments of antenna; F, ditto, 2nd and 3rd segments of antenna (enlarged); G, prosternal process, lateral aspect; H, apical segment of maxillary palpus; I, right hind angle of pronotum; J, apical portion of aedeagus, dorsal aspect; K, ditto, left apical portion (enlarged); L, ditto, median lobe (enlarged) (apical extremity seems broken); M, ditto, left apical portion (showing a variation at outer angle).

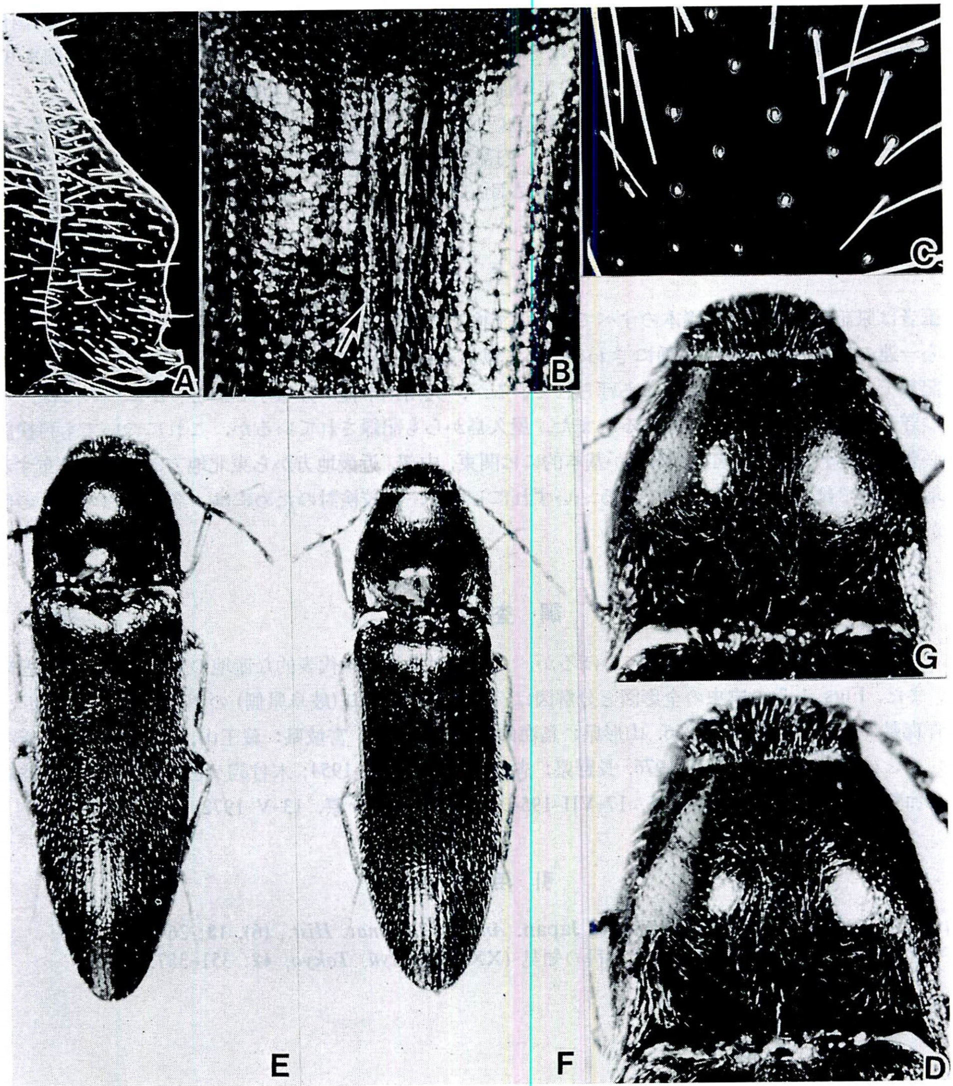

Fig. 2. *Ampedus* (*Ampedus*) *tenuistriatus*, male (except for F and D which are females), Mt. Hakusan in Gifu-ken. —— A, Basal plate; B, basal area of elytral striae (arrow indicates elytral suture); C, some punctures on the disk of pronotum; D and G, pronotum in dorsal aspect; E–F, adults in dorsal aspect.

G). 前胸腹板突起は，前肢基節腔を越えて弱く内方へ湾曲，後半部で水平状になる (Fig. 1 G). 小盾板は舌状で，両側は湾曲して細まる (Fig. 1 C).

上翅の条線は浅く印し，間室部は一般に扁平で，弱くしわ状である (Fig. 2 B). 腰板の外形は図示したようである (Fig. 2 A).

交尾器の外形は図示したようで，側突起の末端部の三角状部は幅よりやや長く，外縁は弱く内方へ

湾曲して伸長し，外角部には数個の小段刻を生ずる (Fig. 1 K). しかし，この段刻部の形態には，個体による若干の変異がみられる (Fig. 1 M はその変異の 1 例を示した). 中央突起は末端へ漸次細まり，末端は内方へ湾曲してとがる (Fig. 1 L の末端部は破損しているため，切断状になっている).

雌. 一般外形は雄に類似するが，体は一般により幅広く，両側はより平行状である. また，触角はより短かく，末端は前胸背板の後角に達しない. 内部生殖器の交尾嚢内には，通常 25〜30 本内外の刺状片を有する. 各刺状片は発達が悪く，中央部に弱いくびれが生じている (Fig. 1 B).

あとがき

筆者は原記載で扱われた標本のすべてについて検していないので，正確なことはわからないが，これら一連の標本のなかに，本種にきわめてよく似た近似種が含まれていることは充分に考えられる. 原記載では熊本県の湯山が産地にあげられているが，九州に本種が分布するかどうかについては，今後の詳しい調査が必要だと思われる. また，屋久島からも記録されているが，これについても再検討が必要かと思われる. 筆者は，本種が基本的には関東，中部，近畿地方から東北地方にかけて分布する山地性の種ではないかと判断している. いずれにしても，比較検討のためには，各地からの多くの個体が必要である.

調査標本

この研究で調査した個体は多数にのぼるが，ここでは各地域の代表的な産地のものを示すにとどめた. また，Figs. 1-2 の成虫の全影図と分解図は，すべて加賀白山 (岐阜県側) の個体を用いた.

青森県: 十和田，17-VI-1956. 山形県: 鳥海山，11-VI-1977. 宮城県: 蔵王山，24-VII-1976. 新潟県: レンゲ峠 (南越)，29-VII-1976. 長野県: 志賀高原，11-VII-1954; 木曾駒ケ岳，6-VII-1954. 岐阜県: 加賀白山，20-VI-1972; 平湯，17-VII-1954. 奈良県: 大台ケ原，13-V-1972.

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ISSN 0387−5733

ELYTRA

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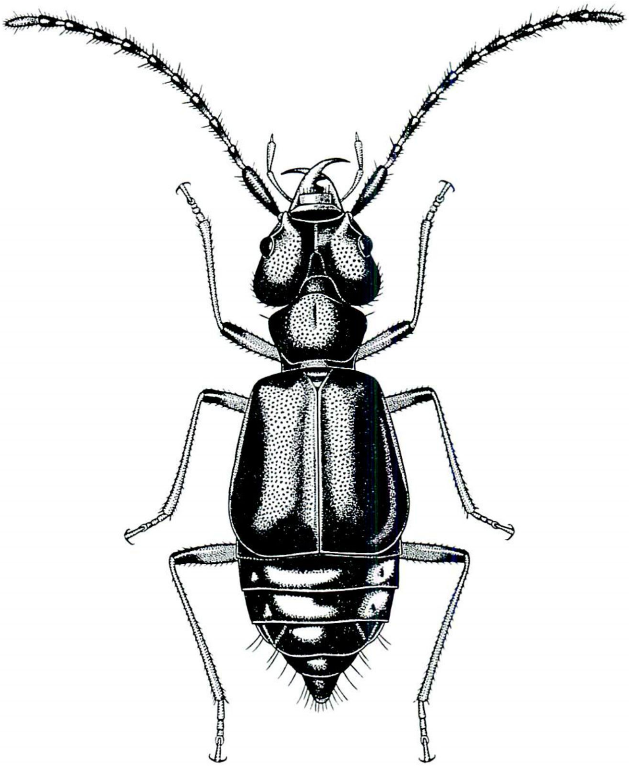

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TOKYO

Dates of Issue:

Vol. 17, No. 1	May 15, 1989
Vol. 17, No. 2	November 15, 1989

CONTENTS 目 次

Announcement (Shun-Ichi UÉNO) 1
[会告（上野俊一）]

IMURA, Y.: Two New Subspecies of Carabina (Coleoptera, Carabidae) from Mt. Togyu-san, South Korea 109
[井村有希：韓国南部，徳裕山産オサムシの2新亜種]

IMURA, Y., & H. KEZUKA: A New Genus and Species of Carabid Beetle Allied to *Damaster* (Coleoptera, Carabidae) from Yunnan, Southwest China 3
[井村有希・毛塚尚利：中国雲南省より発見されたマイマイカブリ属に近縁なオサムシの1新属新種]

IMURA, Y., & M. SATÔ: A New Subgenus and Species of *Apotomopterus* (Coleoptera, Carabidae) from Taiwan 101
[井村有希・佐藤正孝：台湾中央部で発見されたトゲオサムシ属の1新亜属新種]

KASAHARA, S.: Two New Relatives of *Pterostichus cristatoides* (Coleoptera, Carabidae) from Central Japan....................................35
[笠原須磨生：シンシュウナガゴミムシ（オサムシ科）に近縁の2新種]

KASAHARA, S.: Occurrence of *Paropisthius* (Coleoptera, Carabidae) in Taiwan 113
[笠原須磨生：台湾の高山に生息するニセハンミョウ属の1新種]

KASAHARA, S.: A New Species of the Genus *Stenolophus* (Coleoptera, Carabidae) from Central Japan 153
[笠原須磨生：本州中部から記載されるマメゴモクムシ属（オサムシ科）の1新種]

KASAHARA, S., & N. OHTANI: A New Pterostichine Carabid Beetle from the Island of Kyushu, Southwest Japan 147
[笠原須磨生・大谷規夫：九州山地産ナガゴミムシ属（オサムシ科）の1新種]

MASUMOTO, K.: A New *Laena* (Coleoptera, Tenebrionidae) from Northwest Thailand 61
[益本仁雄：北西タイ産 *Laena* 属 (Tenebrionidae, Adeliini) の1新種]

MASUMOTO, K.: Coprophagous Scarabaeids Related to *Onthophagus orientalis* (Coleoptera, Scarabaeidae) from Southeast Asia 175
[益本仁雄：*Onthophagus* (s. str.) *orientalis* (Scarabaeidae) の近縁種について]

MASUMOTO, K.: Tenebrionidae of East Asia. (V) A New Genus Related to *Blaps* (Blaptini) and a New Species from Northwest Thailand 187
[益本仁雄：北西タイ産 *Blaps* 属 (Tenebrionidae, Blaptini) 近縁の1新属新種の記載]

MORITA, S.: *Bembidion gebleri* GEBLER (Coleoptera, Carabidae) and its New Relative 19
[森田誠司：*Bembidion* (*Plataphus*) *gebleri* GEBLER と近縁の1新種]

MORITA, S.: A New *Apatrobus* (Coleoptera, Carabidae) from the Suzuka Mountain Range, Central Japan 143
[森田誠司: 鈴鹿山脈産ヌレチゴミムシの1新種]

MORITA, S., & T. SUDA: *Nebria* (*Orientonebria*) *coreica* SOLSKY (Coleoptera, Carabidae) in Tochigi Prefecture, Central Japan 119
[森田誠司・須田　亨: チョウセンマルクビゴミムシの栃木県からの記録]

NAOMI, S.-I.: Studies on the Subfamily Steninae (Coleoptera, Oxyporidae) from Japan. XII. Subgenus *Hypostenus* of the Genus *Stenus* LATREILLE, Part 4 45
[直海俊一郎: 日本産メダカハネカクシ亜科の研究. XII. メダカハネカクシ属 *Hypostenus* 亜属, 4]

NAOMI, S.-I.: Studies on the Subfamily Steninae (Coleoptera, Oxyporidae) from Japan. XIII. Subgenus *Hypostenus* of the Genus *Stenus* LATREILLE, Part 5 ... 159
[直海俊一郎: 日本産メダカハネカクシ亜科の研究. XIII. メダカハネカクシ属 *Hypostenus* 亜属, 5]

NIISATO, T.: Discovery of a New Cerambycid Beetle of the Genus *Cyrtoclytus* (Coleoptera, Cerambycinae) in the Malay Peninsula 87
[新里達也: キスジトラカミキリ属のマレー半島からの発見]

大平仁夫: オイワケクロコメツキの形態について 91
[ŌHIRA, H.: Notes on the Morphological Structure of *Ampedus* (*Ampedus*) *oiwakensis* (Coleoptera, Elateridae) from Japan]

大平仁夫: ホソクロコメツキの形態について 239
[ŌHIRA, H.: Notes on the Morphological Structure of *Ampedus* (*Ampedus*) *tenuistriatus* (Coleoptera, Elateridae) from Japan]

SAITO, A.: Female Reproductive Organs of Lepturine Cerambycid Beetles from Japan, with Reference to their Taxonomic Significance (Part 1) 65
[斉藤明子: 日本産ハナカミキリ亜科の雌交尾器とその分類学的重要性]

SAITO, A.: Female Reproductive Organs of Lepturine Cerambycid Beetles from Japan, with Reference to their Taxonomic Significance (Part 2) 201
[斉藤明子: 日本産ハナカミキリ亜科の雌交尾器とその分類学的重要性]

SAITO, S., & A. SAITO: A New *Pidonia* (Coleoptera, Cerambycidae) from the Hokuriku District, Central Japan 193
[斉藤秀生・斉藤明子: 北陸地方産ヒメハナカミキリの1新種]

SATÔ, M.: Notes on *Podabrus* (Coleoptera, Cantharidae) from the Zaou Mountains, Miyagi Prefecture, Japan 181
[佐藤正孝: 宮城県蔵王山のクビボソジョウカイ属に関する覚え書き]

SATÔ, M., & W. WITTMER: Some Notes on Japanese Melyridae (Coleoptera) 57
[佐藤正孝・Walter WITTMER: 日本産ジョウカイモドキ科の覚え書]

SENOH, T.: A New Species of the Genus *Ulorhinus* (Coleoptera, Anthribidae) from the Islands of Tsushima, Japan 235
[妹尾俊男: 対馬から発見された *Ulorhinus* 属の1新種]

UÉNO, S.-I.: Systematic Position of the Trechine Genus *Eocnides* (Coleoptera, Trechinae) 9
[上野俊一: ヒゲナガチビゴミムシの帰属]

UÉNO, S.-I.: New Oculate *Trechiama* (Coleoptera, Trechinae) from Miyagi Prefecture, Northeast Japan 123
[上野俊一: 宮城県に分布する有眼のナガチビゴミムシ類]

UÉNO, S.-I.: Discovery of an Eyeless Trechine Beetle (Coleoptera, Trechinae) in Taiwan 135
[上野俊一: 台湾の高山におけるメクラチビゴミムシの発見]

WATANABE, Y.: A New Species of the Genus *Lathrimaeum* (Coleoptera, Staphylinidae) from Japan 53
[渡辺泰明: 日本産 *Lathrimaeum* 属の1新種]

WATANABE, Y.: Two Taiwanese Staphylinid Beetles Related to *Quedius abnormalis* (Coleoptera, Staphylinidae) 169
[渡辺泰明: 台湾で得られたツヤムネハネカクシ種群に属する2種]

Short Reports 短報

HAYAKAWA, H.: New Record of *Acicnemis dorsonigrita* (Coleoptera, Curculionidae) from the Island of Okinawa 186

井村有希: 富士川右岸におけるアオオサムシの記録 112
[IMURA, Y.: Record of *Carabus* (*Ohomopterus*) *insulicola* CHAUDOIR from the Right Bank of the River Fuji-kawa, Central Honshu, Japan]

笠原須磨生: 晩秋のナガゴミムシ数種 43
[KASAHARA, S.: Some Pterostichine Carabids Collected in the Late Autumn]

笠原須磨生: 岐阜県濁河温泉のナガゴミムシ類 157
[KASAHARA, S.: Some Pterostichine Carabids from Nigorigo Spa in Gifu Prefecture, Central Japan]

笠原須磨生: 静岡県大井川上流二軒小屋のナガゴミムシ類 158
[KASAHARA, S.: Some Pterostichine Carabids from Nikengoya on the Akaishi Mountains in Shizuoka, Central Japan]

笠原須磨生・伊東善之: ヤマトモリヒラタゴミムシ四国に産す 152
[KASAHARA, S., & Y. ITÔ: Occurrence of *Colpodes yamatonis* (Carabidae) in the Island of Shikoku, Southwest Japan]

益本仁雄: マユミニジキマワリの記録 192
[MASUMOTO, K.: Record of *Cyriogeton mayumiae* MASUMOTO (Coleoptera, Tenebrionidae, Amarygmini)]

森田誠司: 対馬のニセコガシラアオゴミムシ 121
[MORITA, S.: *Chlaenius kurosawai* KASAHARA of the Islands of Tsushima, West Japan]

MORITA, S., & H. MATSUMOTO: Notes on the Bembidiinae (Carabidae) of Japan. II. *Bembidion shimoyamai* HABU in Hokkaido 122

NIISATO, T.: An Additional Note on *Cleomenes longipennis* (Coleoptera, Cerambycinae) 95

NIISATO, T.: New Synonym of *Leptepania minuta* (Coleoptera, Cerambycinae), with Collecting Data of the Taiwanese Species 200
SATÔ, M.: Records of Some Coleoptera from Uotsuri-jima, the Ryukyus 44
SATÔ, M., & T. ABE: A New Record of *Agabus* Species (Coleoptera, Dytiscidae) from Hokkaido, Japan 168
SATÔ, M., & Y. KUSUI: Some Records of Aquatic Coleoptera from the Daitô Islands, the Ryukyus...8
UÉNO, S.-I.: Occurrence of *Trechodes leclerci* (Coleoptera, Trechinae) in Northwest Thailand...134
WATANABE, Y.: An Unrecorded *Philonthus* (Coleoptera, Staphylinidae) from Japan 56

オサムシ亜目の新しい分類体系（論文紹介；上野俊一）..........................97
コガネムシが昆虫全体の代表になるか？（上野俊一）............................234
新刊紹介 94, 238
Elytra (a journal of the Japanese Society of Coleopterology) 編集規則・投稿規定...99

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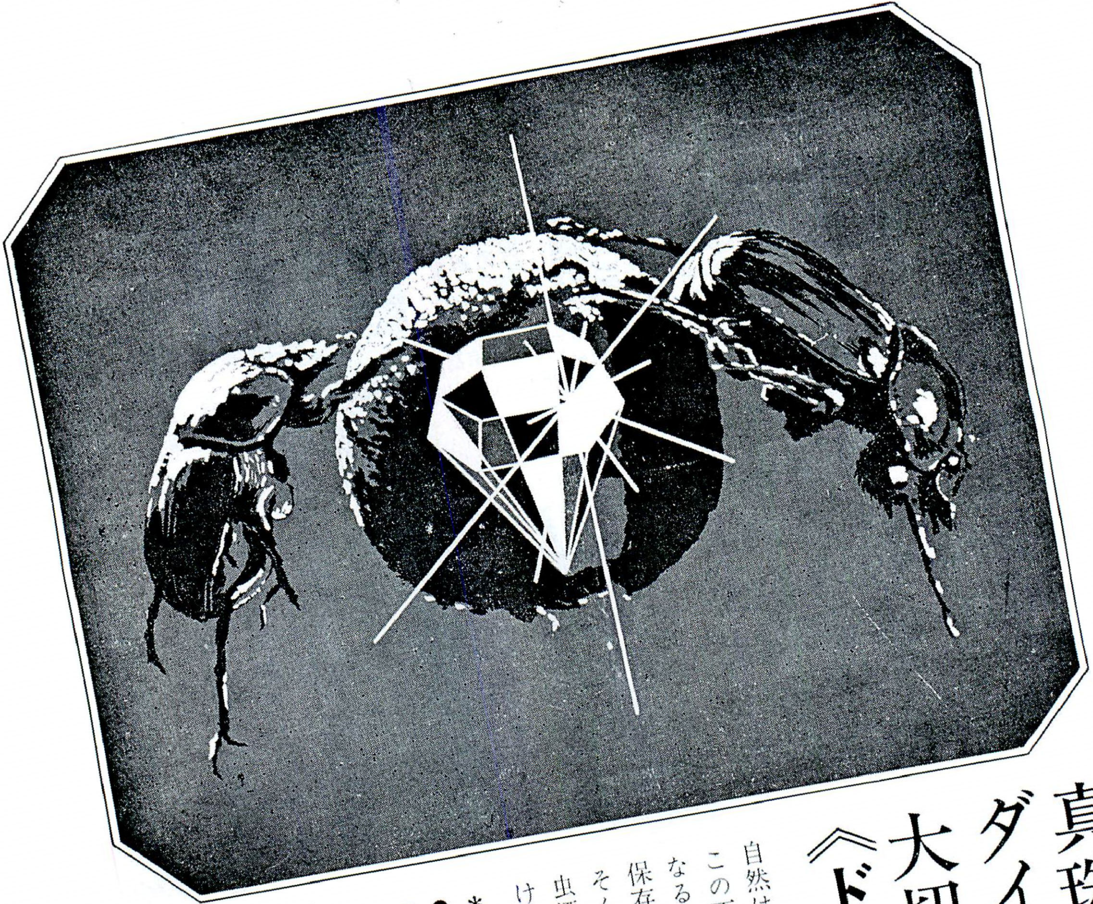

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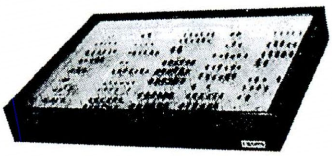

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